

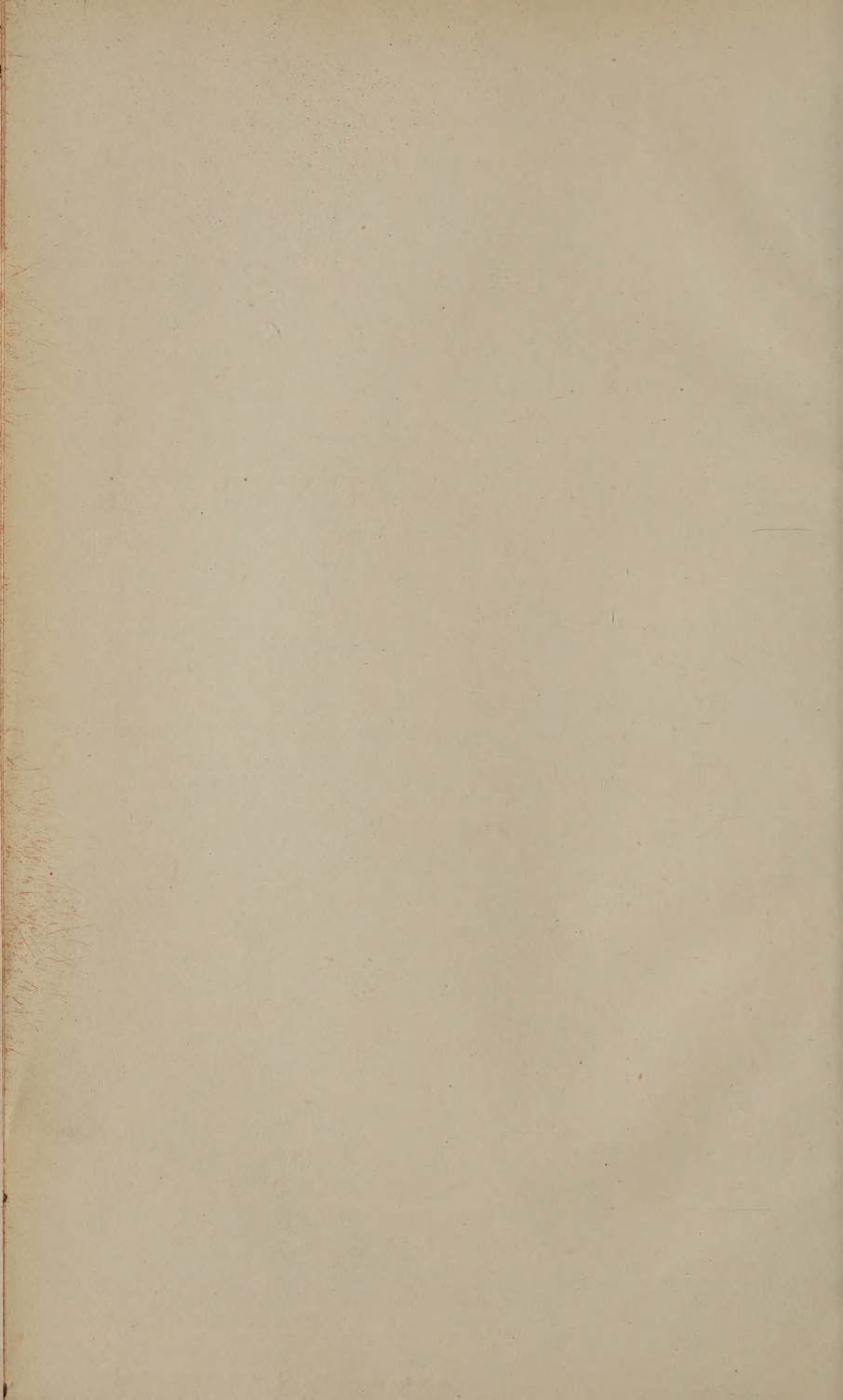


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DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

VOL. LXXII.

JULY TO DECEMBER, 1881.

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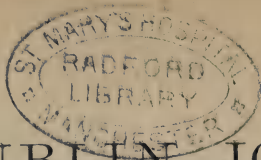
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JULY 1, 1881.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Congenital Deformity of the Lower Lip*.—By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital; Consulting Surgeon to the Dublin Orthopædic Hospital.

THE rarity of malformation of the lower lip—a fact admitted by the general consent of operating surgeons and pathologists—may render the record of such a case of interest to the profession. There is no need to quote authorities in proof of the statement that this is a most uncommon form of abnormal development. In my own clinical experience, now extending over quarter of a century, I have met with only one other example beside the subject of this memoir. A child on whom I operated some years ago for talipes varus presented the remarkable appearance of a cleft in the mesian line of the lower lip. It involved about one-third of its depth, and its margins were coloured as the red border of the lip. The free angles did not present the rounded tubercle so commonly observed in congenital cleft of the upper lip. The edges being pared in the usual way and brought into apposition by the twisted suture, no difficulty was experienced in effecting complete and satisfactory union. As a matter of family history it is interesting to note that other cases of ordinary hare-lip had occurred. The little patient which is here delineated was sent to Steevens' Hospital by my friend, Dr. Young, of Ballitore.

An infant about three months old, otherwise well developed, strong, and in good health, presented double hare-lip. To the

hospital surgeon, who sees every form of this affection almost daily, there is little of interest to record on this part of the case. The palate, both hard and soft, was well united along its entire extent, the incisive cartilage was very prominent, and, however anxious I may have been to save it and push it back, I was obliged to remove the central piece, as there was no space to receive it, and the strain caused by its projection would certainly have militated against the due adjustment of the lateral segments. The lower lip, however, presented a most striking and unusual appearance. On either side of the median line a small nipple-shaped papilla grew from the red border of the lip; in substance and colour they seemed identical with that tissue. The entire lower lip appeared to be loose and projecting, and these little outgrowths fitted with wonderful accuracy into the lateral fissures above, so that when the mouth was compressed the deficiency of the upper was almost completely supplemented by the redundancy of the lower lip—one might almost have thought that they had been produced or drawn up into this position by the act of suction; but there is not a shadow of doubt about the fact that they were on the lip when the child was born. It is remarkable that there is in this family a strong predisposition to such malformations, several cases of hare-lip having been presented among its members. When the child had sufficiently recovered from the shock of the operation on the upper lip, and the union was sufficiently firm to be relied upon, these papillæ were snipped off with a curved scissors, and each little wound united by a point of fine catgut suture.

It is difficult to assign any scientific explanation of this appearance deduced from the law of development of the mouth. Was it an attempt to close or interrupt the intermaxillary cleft? Was it caused by movements as of sucking, *in utero*, favoured by the want of resistance at points corresponding to the lateral fissures in the lip above? Did either of these hypotheses afford a satisfactory explanation of the nature of these phenomena, they would be of much more frequent occurrence, and would have been noted in many cases of hare-lip. Were it not that their symmetry was so accurate, and that they appeared to have a *raison d'être* in closing the otherwise imperfect mouth, we might with complacency shelter our ignorance under the cloak of *lusus naturæ*.

ART. II.—*Extra-Capsular Fractures of the Neck of the Femur.*^a

By ALEXANDER GORDON, M.D., Professor of Surgery, Queen's College, Belfast.

(Continued from Vol. LXXI., p. 507.)

Second Form.—In the form which I have described as the first, the line of fracture in front may be through the anterior intertrochanteric line, or it may include a large portion of the anterior surface of the upper part of the shaft extending almost to its outer surface. Now in this, the second form, the line of fracture in front is along the inner margin of the anterior intertrochanteric line; above and behind it is at the point of reflection of the compact tissue of the base of the neck, where it changes its direction to form the apex of the trochanter and the posterior intertrochanteric line, above or below the lesser trochanter. Its course is, therefore, more limited to the base of the neck than the first form. From the direction of the force which is applied to the fore and upper part of the head, the base of the neck in front penetrates behind the compact tissue forming the upper part of the shaft; and, as the line of fracture behind is at the junction of the base of the neck with the posterior intertrochanteric line, it follows that the entire base of the neck penetrates the trochanter, and, in consequence of this mode of penetration, the trochanteric fragment is much greater than in any of the other forms. I have applied to this the term *penetration en masse*. In many instances nearly the whole of the trochanter is separated from the shaft above. Behind it extends almost, in some instances, to the outer surface of the shaft and below, including the lesser trochanter and part of the shaft below and behind it all in one fragment. In one of the specimens before me at present the depth of the trochanteric fragment is four inches, and its breadth two inches. The angle formed between the neck and the shaft varies but little; it is often a right angle, or sometimes more or even less than a right angle. As the base of the neck is directed more or less backward, there is very little eversion of the limb. Sometimes there is well-marked inversion, and occasionally neither eversion nor inversion. Owing to the depth to which the base has penetrated, there is well-marked shortening of the limb, and a manual examination of the upper end of the shaft renders the diagnosis usually very easy—the great increase in the antero-posterior diameter, from the

^a Read before the Ulster Medical Society, 10th May, 1881.

flattening of the great trochanter, and the great size of the trochanteric fragment, and also often a well-marked trochanteric groove. As nearly the whole of the apex of the trochanter is broken off and carried backwards, measurement of the outer surface of the femur shows a shortening in many instances equal to the depth of the trochanter, or more than an inch. Passing the finger along the outer bifurcation of the linea aspera detects at once the prominence of the fragment, contrasting remarkably with the opposite femur. If there is not much swelling, and the limb slightly everted, we may be able to feel the prominence of the anterior intertrochanteric line, which in recent cases would be very painful on pressure. I think that in this case the moment the fracture occurs, instead of the pelvis gravitating backwards as in the first form, it falls forwards; or, in other words, the patient will be found immediately after the accident lying on his back, with the toes remarkably turned out, in the first form, while in this, the second form, the patient will be found prone, with the limb scarcely at all everted or inverted. It is this form which some authors have described as non-impacted extra-capsular fracture—that is to say, where the base of the neck rests upon the large flattened trochanteric fragment and the upper end of the shaft, where penetration has been carried to such an extent that impaction no longer exists.

I have several specimens of the extra-capsular non-impacted fracture. They all occurred in persons of extreme old age, in which there was great fragility of the bone, from senile atrophy, and the force which caused the accident was not of extreme violence, but was by simply falling and alighting on the trochanter.

Treatment.—The treatment of this form is the same as that of the first. Indeed, when I compare two well-marked specimens, I find, in the first form, if the force had been continued it would have placed the base of the neck upon the front of the shaft, with the trochanteric fragment attached to the shaft, whereas, in the second form, the base of the neck would have gone behind the shaft, with the neck attached to the trochanteric fragment.

As regards the impaction of bone, I may here remark that I have never seen any bone whatever, no matter how deeply the fragments were driven into each other, held firmly together. If I take an axe and drive it into a piece of wood, the resiliency of the wood will hold it firmly impacted, but in bone it is the fibrous tissue and not the osseous tissue that holds the fragments firmly together,

for if we remove the fibrous tissue the osseous fragments will drop apart from each other.

Third Form.—The basis upon which I found the third form is the deep penetration of the trochanter above and behind, the result of which is a great increase of the angle between the shaft and the neck.

I have only two specimens of this form, and the propriety of considering them as a third form might be questioned, as the mode of penetration above is not exactly the same in each. In one the penetration is deeper above and behind, breaking off a comparatively small part of the upper and posterior part of the trochanter. The increase of the angle is very decided, and the shortening was so slight that it could not be detected by measurement. In other respects it resembles the first form in which the head is carried backwards, the base of the neck forming a salient angle in front.

Diagnosis.—The diagnosis could have been easily made out by the prominence of the base of the neck in front, the increase of the antero-posterior diameter being confined to the apex of the trochanter, without shortening of the limb. In the second specimen the base of the neck has penetrated deeply above, fissuring the trochanter, whilst below it is started forwards, slightly overlapping the shaft in front of the lesser trochanter. The angle is very obtuse. A similar specimen is figured by Mr. (afterwards Sir) Charles Bell in his work on “Fractures of the Thigh Bone.”

Fourth Form.—In the fourth form, as in some specimens of the other three varieties, the fracture follows the base of the neck as described by anatomists. The penetration, although slight, is most marked between the lesser trochanter and the anterior internal ridge of the shaft. The compact tissue being thick and strong here, the base of the neck entering as a wedge splits the shaft. In one instance the fracture passes downwards to four inches below the base of the trochanter, in the other it is eight inches in length. In one of these the trochanter is simply fissured above. The patient from whom this specimen was obtained was under my own care in hospital. On making my usual visit I inquired from the house-surgeon the nature of the case. He replied it was a very oblique fracture of the upper third of the femur. On the fourth day afterwards the patient was attacked with traumatic delirium, and as he had displaced the long splint which had been applied, I saw and felt on the outer surface of the

thigh four inches below the lesser trochanter the lower end of the upper fragment sharp, thin, and prominent. There was no shortening or eversion of the limb. He died on the seventh day. The femur was removed after death, and when given to me by the house-surgeon I thought it was a very oblique fracture proceeding from the base of the neck below, running down across the rough ridge from the attachment of the gluteus maximus. After that it coursed round the outer surface of the femur, and ran up to the capsule at the middle of the base of the neck. On removing the capsule and soft textures I found that the base of the neck moved upon the trochanter, and that this really oblique fracture was caused by the base of the neck penetrating the shaft opposite the lesser trochanter. Had this patient escaped traumatic delirium, there would have been no evidence whatever that he had sustained an extra-capsular fracture. There would have been no eversion, inversion, or shortening of the limb; there would have been no fracture of the trochanter capable of detection. The attachment of the gluteus maximus behind to the linea aspera prevented shortening. In front the upper end of the shaft was firmly attached to and fixed by the capsule. In no part was the penetration greater than half a line.

The second specimen was presented to me by a former pupil of mine, Dr. Chambers. In it the portion of the shaft attached to the trochanter is eight inches in length. It was even sharper and thinner than the first specimen. The amount of penetration of the base of the neck, however, was much greater, but in neither of the two instances was the trochanter broken in the usual way in these fractures. Indeed, in both specimens it may be said to consist of head and neck one fragment, the greater and lesser trochanter to the upper and outer surface of the shaft form the second fragment, whilst the remainder of the shaft forms the third fragment.

Now, this form is exceptional in several respects:—(1) The trochanter will be felt to be normal. (2) There will be no shortening, (3) inversion, (4) or eversion. The obliquity and thinness of the fragment, which is split from the upper and outer part of the shaft of the femur, would be sufficiently diagnostic, and I could hardly conceive any other force excepting the base of the neck forming such an oblique and thin fragment. (5) It is also exceptional in its treatment, as it would require the use of the long splint to hold the split fragments together.

Fifth Form.—In the fifth form the fracture of the base is the usual one, but it acts on the neck by running obliquely upwards towards the head, splitting the neck into two unequal parts. The diameter of the neck being thus diminished, that portion of the neck attached to the head penetrates deeply, and reaches in the two specimens which I have to the inner surface of the upper end of the shaft. Indeed, I have several specimens in which large portions of the neck have been broken off and have disappeared, leaving merely the portion of the neck which was attached to the head. The trochanter is also fissured, but not widened so much as to enable us to detect any lesion of it.

Diagnosis.—In the diagnosis the signs would be regarded as indicating an intra- rather than an extra-capsular fracture.

ART. III.—*Medical Report of the Fever Hospital and House of Recovery, Cork-street, Dublin, for the year ending 31st March, 1881.* By JOHN WILLIAM MOORE, M.D., M.Ch. Univ. Dub.; Fellow and Ex-Censor of the King and Queen's College of Physicians; Physician to the Hospital, and to the Meath Hospital and County Dublin Infirmary; Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin, &c.

THE present Annual Medical Report of Cork-street Hospital and House of Recovery proceeds upon the same lines as the Reports for previous years. The statistical tables, in which are contained the data for the medical history of the year, have been compiled, as usual, by Dr. G. Purcell Atkins, who has spared no pains in the effort to make the tables as comprehensive as possible, and thoroughly accurate. To him I desire to express my acknowledgments for the valuable aid he has thus given me in the writing of this Report.

From the yearly statement of patients it appears that the admissions to the hospital were 1,250 in number. The corresponding numbers for the preceding four years were:—

1876-77,	-	-	-	-	-	666
1877-78,	-	-	-	-	-	936
1878-79,	-	-	-	-	-	2,151
1879-80,	-	-	-	-	-	1,083

As my colleague, Dr. Harvey, pointed out in his Report of last year,

the fluctuation in these numbers is mainly due to the epidemic of smallpox which developed in the autumn of 1876. If we omit the smallpox cases, the admissions for the *four* years are:—

1876-77,	-	-	-	-	637
1877-78,	-	-	-	-	683
1878-79,	-	-	-	-	642
1879-80,	-	-	-	-	483

Which shows that the total number of cases other than smallpox was steadily maintained at about 650 for three years, but fell in 1879-80 to 483—a diminution of about 25 per cent.

In 1880-81, 411 cases of smallpox were admitted, and if these are deducted from the total admissions, 1,250 in number, we have the startling result of an increase in the number of cases other than smallpox from 483 in 1879-80, to 839 in 1880-81. This increase was almost entirely due to an epidemic of typhus fever. The admissions of patients suffering from this fever were 420, against 94 in the preceding year; this increase of 326 closely agrees with the difference between 483 and 839—namely, 356.

TABLE I.—*Showing the Monthly Statement of Patients from 1st April, 1880, to 31st March, 1881.*

Years	Months	Admitted	Daily Average No. of Patients in Hospital
1880	April, - -	120	80·66
	May, - -	177	99·39
	June, - -	166	129·60
	July, - -	114	105·33
	August, - -	62	83·16
	September, - -	82	59·60
	October, - -	81	74·29
	November, - -	134	83·26
	December, - -	113	104·55
1881	January, - -	83	70·87
	February, - -	68	68·00
	March, - -	50	55·06
	Total and Average,	1,250	84·48

Table I. shows for each month of the hospital year—(1) the total number of patients admitted; (2) the daily average number of patients under treatment in the wards. The large number of admissions in the first four months, April to July inclusive, depended on the epidemic of smallpox which at the time still raged

in Dublin. In August the summer fall in the admissions first made itself felt, and the house remained tolerably light until the close of October, when typhus fever began to fill the wards. The epidemic of this disease continued to prevail until the middle of January, when it suddenly and unexpectedly declined in a period of extremely severe winter weather. At the close of the official year the state of the house was very satisfactory, only 43 patients being on the books on March 31st.

The daily average number of patients in hospital varied from 129·60 in June, to 55·06 in March. For the whole year the daily average was 84·48, compared with 69·28 in the previous year, and 114·67 in 1878-79.

LOCALITIES.

The following is an analysis of the various streets in the city from which the cases came:—

186 streets furnished 1 case.				3 streets furnished 10 cases.			
58	"	"	2 cases.	3	"	"	11
29	"	"	3 "	2	"	"	13
19	"	"	4 "	2	"	"	15
7	"	"	5 "	2	"	"	17
9	"	"	6 "	1	"	"	21
7	"	"	7 "	1	"	"	23
4	"	"	8 "	1	"	"	27
4	"	"	9 "	1	"	"	60

Suburbs.

Cases		Cases		Cases	
Bray, -	1	Finglas, -	1	Rathfarnham, -	4
Ballsbridge, -	4	Glasnevin, -	2	Ringsend, -	2
Clontarf, -	1	Goldenbridge, -	1	Rathgar, -	2
Castleknock, -	2	Harold's-cross, -	1	Rathmines, -	1
Crumlin, -	3	Irishtown, -	4	Sandymount, -	4
Chapelizod, -	1	Kingstown, -	2	Sandford, -	1
Donnybrook, -	3	Monkstown, -	1	Tallaght, -	2
Dundrum, -	2	Newbridge, -	1	Terenure, -	8

One hundred and thirty-six patients were admitted from public institutions. Plunkett-street alone furnished 60 cases from the following numbers:—4, 5, 6, 7, 8, 12, 14, 17, 18, 19, 20, 22, 23, 27, 39, 40, 42, 43, 44, 45, 47, 52, 59.

TABLE II.—*Showing the Number of Admissions of the Principal Diseases, and the Mortality of the Cases treated to a termination, for the year ending 31st March, 1881.*

	Typhus Fever	Enteric Fever	Relapsing Fever	Simple Fever	Intermittent Fever	Smallpox	Scarlatina	Measles	Pneumonia	Whooping Cough	Diarrhoea	Erysipelas	Meningitis
1880 April, -	11	4	—	12	—	66	10	5	5	—	—	—	—
May, -	18	5	—	16	—	109	14	7	5	—	—	—	—
June, -	11	3	—	12	—	112	14	7	—	—	—	—	—
July, -	12	6	—	6	—	53	13	2	8	—	2	—	2
August, -	14	5	—	7	—	16	11	—	3	—	2	—	—
September, -	18	16	—	5	1	9	17	4	3	—	3	—	1
October, -	39	3	—	8	—	6	16	2	—	2	—	—	—
November, -	83	1	—	15	—	9	12	4	2	—	—	1	—
December, -	95	1	—	7	—	5	2	—	3	—	—	—	—
1881 January, -	50	—	—	7	—	15	3	1	2	—	—	1	—
February, -	33	1	—	6	—	6	14	—	—	—	—	—	—
March, -	36	2	—	2	—	5	3	—	—	—	—	—	—
Total, 1880-81, -	420	47	—	103	1	411	129	32	31	2	7	2	3
Total, 1879-80, -	94	37	—	104	—	600	98	30	43	2	3	3	7
Increase this year, -	326	10	—	—	1	—	31	2	—	—	4	—	—
Decrease this year, -	—	—	—	1	—	189	—	—	12	—	—	1	4
Died, - -	45	6	—	—	—	88	23	2	10	1	1	—	2
Mortality per cent.	10·7	12·7	—	—	—	21·4	17·8	6·2	32·2	50·0	14·2	—	66·6

Catarrh, 7 ; bronchitis, rheumatism, 5 each ; phthisis, 3 ; debility, cynanche, jaundice, nephritis, and tonsillitis, 2 each ; otorrhœa, erythema, alcoholism, colic, sciatica, constipation, heart-disease, tabes mesenterica, gonorrhœa and copaiba-rash, 1 each ; no disease, 22.

From Table II. it appears, that during the year 1,188 patients suffering from epidemic diseases were treated in the hospital ; 40

patients were admitted and treated, whose cases were less suitable for a fever hospital; while in 22 instances there proved to be no definite disease on due and careful examination of the patients. Of course the 22 individuals who were not really ill were discharged as soon as the true state of the case was discovered. Allusion has been made in former reports to the extreme difficulty which sometimes attends the diagnosis of a case for which admission to a fever hospital is sought. Occasionally two or three days must pass before a definite opinion can be expressed, and in all doubtful cases it is more expedient to admit a patient than to commit the possible error of sending away one who may really be suffering from an epidemic and infectious disease.

To remove all danger of exposing to infection patients admitted as doubtful cases, the Managing Committee of the hospital have fitted up two observation wards at a considerable cost, and these have proved of very great use since they were opened some months ago.

COMPARATIVE STATEMENT AS TO THE PREVALENCE OF DISEASE.

An analysis of Table II. shows that enteric fever was more prevalent than in the previous year, the admissions being 47 against 37 in 1879-80; simple fever was about as prevalent as before, the admissions being 103 against 104; but the cases of typhus fever increased from 94 to 420. From the same table it appears that no case of relapsing fever was admitted, and that only one case of intermittent fever came under observation. Turning to the exanthemata, or eruptive fevers, we find that the cases of smallpox declined from 600 in 1879-80, to 411 in 1880-81. Of the 411 smallpox patients, no less than 340 were admitted in the first four months, April to July inclusive. Scarlet fever shows a marked increase from 98 to 129 cases. Measles varied but little from the previous year; the admissions were 32 compared with 30. Only 2 examples of erysipelas came under observation, against 3 in 1879-80. Among other epidemic affections we note 31 cases of pneumonia against 43 in the preceding year, 2 cases of whooping cough (2 in 1879-80), 7 cases of diarrhoea (3 in 1879-80), and 3 cases of meningitis (7 in 1879-80).

It is worthy of note that the number of cases of the two most prevalent epidemics, smallpox and typhus fever, were nearly equal; for there were 411 smallpox patients, and 420 typhus patients. These two diseases furnished rather more than two-thirds of the total number admitted during the year—namely, 831 out of 1,250.

RATE OF MORTALITY.

TABLE III.—*Analysis of Deaths of Cases sent in beyond Recovery, 1880–81.*

No.	No. in Registry	Duration in Hospital	Disease	Note
1	72	1 day	Scarlatina	
2	74	2 days	Variola	
3	128	2 days	Variola	
4	151	2 days	Variola	
5	152	2 days	Variola	
6	153	2 days	Bronchitis	Sent in very bad
7	180	2 days	Variola	
8	184	11 hours	Variola	Eight months pregnant.
9	228	2 days	Bronchitis	
10	245	1 day	Variola	
11	326	4 hours	Variola	Sent in dying
12	459	12 hours	Typhus Fever	Sent in dying
13	468	2 days	Typhus Fever	
14	486	2 days	Variola	
15	488	2 days	Typhus	
16	490	2 days	Pneumonia	Sent in very bad
17	497	2 days	Variola	
18	526	1 day	Variola	Sent in very bad
19	527	2 days	Variola	Sent in very bad.
20	608	3 hours	Diarrhœa	Sent in very bad.
21	646	1 day	Scarlatina	Sent in very bad.
22	680	30 hours	Scarlatina	Sent in very bad.
23	684	1 day	Scarlatina	Sent in very bad.
24	802	2 days	Scarlatina	Sent in very bad.
25	851	2 days	Scarlatina	
26	878	5 hours	Bronchitis	Sent in very bad.
27	937	2 days	Typhus	
28	1,099	2 days	Pneumonia	and Pleurisy.
29	1,109	2 days	Scarlatina	
30	1,192	1 day	Heart Disease	

One hundred and eighty-seven patients died during the year; the general death-rate was therefore 14·96 per cent. In 1877–78 it had been 9·49 per cent. In 1878–79 it rose to 20·78 under the influence of a destructive epidemic of smallpox. In 1879–80 it declined to 17·58. The further fall in the mortality during the past

It will be observed that 12 of these 30 hopeless cases were of smallpox—the aggregate duration of the stay in hospital of the twelve patients being only 18 days 15 hours. It is only too evident that several of the 30 patients were sent in at a time in their illness when their removal only hastened their death. Such entries as “scarlatina, one day;” “variola, four hours;” “typhus, twelve hours;” “bronchitis, five hours;” and “heart disease, one day;” are a sad record of the malignancy of disease in some instances, and of errors of judgment in others.

CAUSES OF DEATH.

Particulars as to the deaths each month, and the diseases which caused them, are given in Table IV.

TABLE IV.—*Showing the Deaths in each month, and the Diseases which caused them, during 1880-81.*

[illegible]

Of the 187 deaths which took place within the year, 88, or nearly one half, were caused by smallpox. Next comes typhus, with 45 deaths, or nearly one-fourth of the whole number. To these two diseases together 71.1 per cent. of all the deaths were due; scarlatina caused 23 deaths, and pneumonia 10 deaths.

Table IV. also shows that the largest number of deaths (33) occurred in May, and the least number (2) in March. In the first four months of the hospital year, 109 deaths took place—that is, 58.3 per cent. of the whole number. The epidemic of typhus in the closing months of 1880 exercised but a slight influence on the death-rate.

THE WEATHER.

The Meteorological Table (V.) has been drawn up to enable the reader to institute a comparison between the conditions of weather during the past hospital year and the prevalence of disease in the same period.

The *mean height of the barometer* during the year 1880 was 29.964 inches. The highest observed reading was 30.676 inches, at 9 a.m. on 21st January. The lowest observed reading was 28.373 inches at 4.15 p.m. on 16th February. The extreme range of atmospherical pressure was therefore 2.303 inches.

The *mean temperature* of the year, deducted from the maximal and minimal readings of the thermometer in the shade by Kaemtz's formula,^a was 48.9°. The highest reading was 74.8° on 4th September; the lowest reading was 20.1° on 22nd January. The average mean temperature for the years 1870–79, calculated in the same way, was 48.8°. The mean temperature deduced from the daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 49.4°.

Rain fell on 118 days, including snow or sleet on 18 days, and hail on 27 days. The average number of rainy days in the years 1870–79 was 198.7. The total rainfall measured 34.512 inches, compared with an average of 28.468 inches in the years 1870–79.

As regards the *direction of the wind*, 732 observations were made during the year, with this result—N., 41; N.E., 54; E., 95; S.E., 56; S., 45; S.W., 99; W., 201; N.W., 72; Calms, 69.

^a *I.e.*, $\text{Min.} + (\text{Max.} - \text{Min.} \times .41) = \text{Mean Temperature.}$

TABLE V.—*Abstract of Meteorological Observations taken at 40, Fitzwilliam-square, West, Dublin, by J. W. MOORE, M.D.*

1880.

Month	Mean* Height of Barometer	Mean* Temp.	Mean* Humidity	Rainfall† in Inches	Rainy† Days	Mean* Direction of Wind	Remarks
January, -	30·307	39·1	83·8	·563	8	S.E. & S.S.W.	Cold, dull, and foggy; rainfall and rainy days under the average.
February,	29·647	44·4	83·8	2·581	17	S.W.	An open, windy month; scarcely any frost; frequent rains.
March, -	30·041	44·8	80·1	3·129	16	E.S.E. & S.E.	An open month, often damp and foggy; S.E. winds remarkably prevalent.
April, -	29·861	47·4	78·3	1·832	20	W. & E.N.E.	A showery month, with a mean temperature slightly below the average of previous years.
May, -	30·135	52·0	73·3	·847	9	E.N.E. & W.N.W.	A fine, very dry month, with frequent sunshine and a preponderance of polar winds.
June, -	29·949	56·7	78·7	2·166	18	E. & W. by N.	A favourable month, of average mean temperature; rainfall and rainy days somewhat in excess.
July, -	29·870	58·4	84·1	6·087	24	W. & W.N.W.	Remarkable for the number of "thunderstorm depressions," and for the frequency and severity of the accompanying showers.
August, -	30·047	61·0	86·0	1·401	10	E. & N.E.; calm	Although broken weather prevailed during the first week, this month eventually proved very fine and summerlike.
September,	29·957	57·7	85·5	2·061	15	W., S.W., & S.E.	A month characterised, on the whole, by favourable weather. The 4th was the warmest day this year.
October, -	29·985	44·9	84·9	7·358	15	E.N.E. & W.N.W.	Remarkable for an almost persistent low mean temperature and extremely heavy rainfall.
November,	29·879	44·3	84·0	3·235	20	S.W. & W.	At first mild, afterwards unsettled, with frequent gales and sudden changes of temperature.
December,	29·891	42·7	87·2	3·252	16	W., S.W., & N.W.	The first fortnight singularly mild and open; the last fortnight cold and changeable.
Means and Totals -	29·964	49·5 §	82·9	34·512	188	W.S.W. & E.	The spring was mild and generally favourable; the summer was at first rainy, but subsequently became dry; the autumn was fair to rainy; the winter set in early and was extremely variable.

1881.

January, -	29·914	32·8	86·9	1·369	14	W., S.E. & E.N.E.	A very severe month, with much snow and frost.
February,	29·787	39·9	86·1	2·879	18	E.S.E. & W.N.W.	A rather cold, dull month; the mean temperature 2·7° below the average.
March, -	29·858	42·8	81·6	1·885	17	W. by N. & E.S.E.	At first unsettled, with frequent rains and high winds. Cold and dry from the 20th.

* The columns marked with an asterisk are the results of observations taken daily at 9 a.m. and 9 p.m. The readings of the Barometer are corrected and reduced to 32° at Mean Sea Level.

† The rainfall is recorded daily at 9 a.m.

‡ A "Rainy Day" is one on which at least ·01 inch of rain falls within the 24 hours.

§ The Mean Temperature, calculated from the maximal and minimal readings of the Thermometer by Kaemtz's Formula, was 48·9°.

From nearly every point of view, the year 1880 must be regarded as much more favourable than its predecessor. In January atmospheric pressure was unusually high, the mean being 30·307 inches. The twenty days ending the 27th were persistently cold, but the rainfall and the number of rainy days were considerably under the average. February and March were open months. Damp foggy weather was very prevalent in the latter month. April was showery, with a mean temperature slightly below the average. May was very fine and dry, with frequent sunshine and a preponderance of polar winds. June was a favourable month of average mean temperature, but without any extreme heat. July was remarkable for the number of "thunderstorm depressions" which passed over the British Islands, and for the frequency and severity of the accompanying showers. August opened indeed with broken weather, but eventually proved remarkably fine and summerlike. September was on the whole characterised by favourable weather. Saturday, the 4th, was the warmest day experienced in 1880. October was signalised by an almost persistent low mean temperature, and by an extraordinarily heavy rainfall in Dublin. On the 27th, 2·736 inches of rain fell in the city. November was stormy, and sudden and great changes of temperature often occurred. The first half of December was singularly mild and open, but the second half was cold and changeable.

A general review of the year 1880 shows that the annual mean temperature was only a shade above the average (48·9° compared with 48·8°); the amount of cloud was very slightly below the average (60·5 per cent. compared with 60·9 per cent.); the rainfall was considerably above the average (34·512 inches compared with 28·468 inches); but the number of rainy days fell decidedly short of the average, being only 188 compared with 198·7.

The first quarter of 1881 was decidedly cold; January in particular was very severe—a vigorous frost, with frequent snow falls, lasted from the 7th to the 27th. Notwithstanding, zymotic diseases became less prevalent in Dublin, and the epidemic of typhus fever notably received a check. It seemed almost as if the snow and frost were possessed of antiseptic or disinfectant properties. February was rather dull and cold. The mean temperature was 2·7° below the average. March set in with unsettled weather, but there were a few fine spring-like days about the middle of the month. On the 20th winter returned with severity.

SPECIAL DISEASES.

In analysing the statistics of the different forms of febrile disease treated during the year, it will be expedient to consider—first, the Continued Fevers; and, secondly, the Exanthemata, or Eruptive Fevers.

I.—THE CONTINUED FEVERS.—Table VI. sets forth a summary for ten years of the admissions of patients suffering from the different forms of Continued Fever. The general summary of the admissions of patients in Continued Fever for the year 1880–81 is as follows:—Total number of admissions 570, or considerably more than double the number of admissions in the previous year, and greater than the admissions in any year since 1871–72, when they were 718. Of the 570 patients, 51 died—45 of typhus, and 6 of enteric fever. The mortality was, therefore, nearly 9 per cent. (8·77), compared with 5·53 per cent. in the preceding year, 8·0 per cent. in 1878–79, 4·91 in 1877–78, and 6·48 in 1876–77.

TABLE VI.

Giving a Summary for Ten Years of the Admissions of Cases of Fever.

Mean Temp. Fahr.	Years	Typhus	Enteric	Simple	Totals
49·8	1871–2	173	187	368	718
48·3	1872–3	130	75	284	489
49·5	1873–4	113	77	173	363
49·1	1874–5	112	83	229	424
48·9	1875–6	109	47	162	318
49·4	1876–7	100	55	200	355
48·8	1877–8	134	51	220	405
47·5	1878–9	142	60	173	375
47·4	1879–80	94	37	104	235
47·8	1880–1	420	47	103	570

(a.) *Typhus*.—The great increase in the admissions of “fever” cases was wholly due to an epidemic of typhus, which became severe in the middle of October, and continued prevalent during the following three months. The principal facts relating to this outbreak may be gathered from a study of Tables II., VI., and VII. So far back as January, 1880, typhus had shown an epidemic tendency, and it was pointed out in last year’s Report that the female department of the North Dublin Union Workhouse was the chief focus from which the disease spread in the first instance. In the first quarter of 1880, 57 cases of typhus were admitted to our wards, and of these not fewer than 40 came from

the female division of the North Dublin Union. It is quite true that some of these patients may have contracted the disease before they sought shelter in the workhouse, where they probably spent but one or two days before they were prudently transferred to this hospital. During the first six months of the hospital year 1880-81, the admissions of typhus patients were 84 in number, thus averaging 14 a month. With the advent of wet, cold weather in October, the admissions rapidly increased to 39 in that month. In November they were more than double that number—namely, 83. In December they rose still further to 95. Then came a change as unexpected as it was gratifying. In January, notwithstanding a bitter frost and abundant snowfall—or shall we say in consequence of these climatic conditions?—the admissions fell to 50. In February they declined to 33; and in March they were 36.

TABLE VII.

Showing the Number Admitted and Dead of Typhus Fever, of both Sexes, and at different Ages, for the year ending 31st March, 1881.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 - -	7	1	14·3	Under 5 - -	5	—	—
5 and under 15	67	1	1·5	5 and under 15	66	2	3·0
15 „ 20	42	3	7·1	15 „ 20	50	1	2·0
20 „ 40	58	11	18·9	20 „ 40	83	10	12·0
40 „ 60	13	2	15·3	40 „ 60	23	9	39·1
60 „ 80	1	1	100·0	60 „ 80	5	4	80·0
Total, -	188	19	10·1	Total, -	232	26	11·2
Total No. Admitted, 420		Total No. Died, - - 45		Average Mortality, - 10·7			

The total admissions in the year were 420—in the first quarter 40, in the second 44, in the third 217, and in the fourth 119. Of the 420 patients, 45 died, the mortality being 10·7 per cent. Table VII. shows that the death-rate among female patients was somewhat higher than among males. The influence of advancing age in raising the mortality from this form of fever is clearly brought out in the same table. Of six patients aged sixty years and upwards,

five succumbed, the death-rate being as high as 83 per cent. From a comparison of Tables II. and IV. the disease appears to have been much more malignant at the beginning of the epidemic than it was in its later stages. Thus there were 12 deaths in the first quarter of the year, while the admissions were only 40, the death-rate being 30 per cent. In the third quarter there were 17 deaths, and 217 admissions, the death-rate being only 7·8 per cent., or but one-fourth of that in first quarter. In March, 1881, there was not a single death from typhus, although the admissions were 36 in number.

It is hard to resist the conclusion that the history of the outbreak might be sketched in this way:—A population impoverished and depressed by a prolonged epidemic of small-pox discovered an unusual receptivity to the poison of typhus, which, if not generated, was at all events spread in the North Dublin Union, where presumably many widows of the victims of smallpox found refuge during a season of unparalleled and general distress. The epidemic was held in check in the summer and autumn of 1880, but rapidly developed in intensity when an early and severe winter favoured the spread of infection, owing to diminished ventilation, and a depression of the vital powers.

The present is not by any means the first or only example of an outbreak of typhus fever following closely in the wake of an epidemic of smallpox. At first sight it might appear that the outbreak, occurring under such circumstances, was an example of *Mangel-typhus*, or *Want-typhus*, in the production of which destitution plays the part of the most powerful predisposing cause. But the clinical histories of the majority of the patients, and the characters of the disease as observed in our wards, forbid the adoption of any such view, and lead irresistibly to the conclusion that the present epidemic was essentially due to the spread of an active contagium. Thus, only exceptional cases of purpuric or petechial typhus have been observed, and the death-rate has been moderate—two circumstances which are quite inconsistent with the theory of “want-typhus.” And, on the other hand, whole families have been admitted to the wards, showing how active the poison of the disease has been.

The relatively low mortality may fairly be, in great measure, attributed to the admirable hygienic condition of the fever wards, which were kept scrupulously clean, and were well ventilated and warmed. The comfortable beds, with their wire-woven mattresses

and cleanly bedclothes, no doubt saved the strength of the patients, and aided in their recovery. In this connexion, the absence of bedsores is to be particularly noticed—the equally distributed pressure of these excellent mattresses no doubt conducing to this satisfactory result. Nor must due credit be denied to the care and attention the patients received at the hands of the hospital nurses, whose devotion is worthy of all praise, and most of whom were trained by the Lady Superintendent, Miss Maguire.

The risk which is run by the attendants on typhus has been mournfully illustrated during the past year. Several of the nursing staff contracted the disease, and one resident medical pupil and two nurses lost their lives in the discharge of their duty.

As to the individual cases, it is not possible to enter into details; but it is worthy of note that uræmic convulsions proved fatal in three instances, in two at least of which there was a distinct history of alcoholism. It is more than a coincidence that there was a marked tendency to cases of this kind in January—that is, after the Christmas holidays and during a period of intense cold.

TABLE VIII.

Showing the Number Admitted and Dead of Enteric Fever, of both Sexes, and at different Ages, for the year ending 31st March, 1881.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 - -	1	—	—	Under 5 - -	—	—	—
5 and under 15	8	1	12·5	5 and under 15	7	1	14·3
15 „ 20	4	—	—	15 „ 20	6	—	—
20 „ 40	10	2	20·0	20 „ 40	7	1	14·3
40 „ 60	3	1	33·3	40 „ 60	1	—	—
60 „ 80	—	—	—	60 „ 80	—	—	—
Total, - -	26	4	15·3	Total, - -	21	2	9·5
Total No. Admitted, 47				Total No. Died, - - 6			
				Average Mortality, - 12·7			

(b.) *Enteric or Typhoid Fever* furnished 47 cases against 37 cases in the previous year, and 60 cases in 1878–79. Of the 47 patients

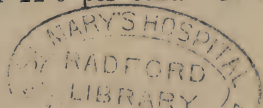
6 died, the average mortality being 12·7 per cent., compared with 10·8 per cent. in 1879–80, and 8·3 per cent. in 1878–79. The incidence of a high mortality at a much younger age than is the case in typhus is well shown in the table, which also illustrates the fact that enteric fever is essentially a disease of adolescence and early adult life. The influence of season on the prevalence of the disease is exemplified by the figures in Table II. In the three months ending September, 1880, 27 of the 47 patients were admitted, and in September alone the admissions were 16 in number, or one-third of the whole. The mortality was higher among males than among females, contrary to what occurred in the preceding two years. The numbers are, however, too small to draw from them any conclusions as to the influence of sex on the mortality.

(c.) *Simple Fever*.—The admission of cases of this form of non-specific fever were 103, or one more than in 1879–80. There was no death, and the only point which calls for remark is the large number of cases in the first quarter—namely 40, and in the third quarter, 30. This coincidence with the periods of maximal prevalence of typhus strengthens the opinion expressed in previous Reports, that many cases of so-called simple fever are really instances of abortive or undeveloped typhus or enteric fever.

II. THE EXANTHEMATA OR ERUPTIVE FEVERS.—As in the previous year, so in this, smallpox and scarlatina were the most prevalent of this class of zymotic affections.

(a.) *Scarlatina*, or, as it may more fitly be termed, *scarlet fever*, furnished 129 cases, compared with 98 in 1879–80, 71 in 1878–79, and only 18 in 1877–78. Of the 129 cases, 107 were admitted in the first eight months of the hospital year—the highest number of monthly admissions being 17 in September and 16 in October. This is in accordance with observed facts as to the seasonal prevalence of scarlet fever.

A glance at Table IX. will show the chief points of interest in connexion with this epidemic disease. In the first place 23 patients died, the mortality being 17·8 per cent., compared with 27·5 per cent. in 1879–80, and 31·0 per cent. in 1878–79. The table strikingly illustrates the prevalence and fatality of scarlet fever in childhood. No fewer than 93 of the 129 patients were children under fifteen years of age; and of those 93 children 21 died—a number which represents a death-rate of 22·6 per cent. Of 28



children under five years of age, 8 died, being a mortality of 29·3 per cent. One patient was upwards of forty years of age.

TABLE IX.

Showing the Number Admitted and Dead of Scarlatina, of both Sexes, and at different Ages, for the year ending 31st March, 1881.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 - -	12	4	33·3	Under 5 - -	16	4	25·0
5 and under 15	31	7	22·5	5 and under 15	34	6	17·6
15 „ 20	5	—	—	15 „ 20	12	1	8·3
20 „ 40	10	—	—	20 „ 40	8	1	12·5
40 „ 60	—	—	—	40 „ 60	1	—	—
60 „ 80	—	—	—	60 „ 80	—	—	—
Total, -	58	11	18·9	Total, -	71	12	16·9
Total No. Admitted, - 129		Total No. Died, - - 23		Average Mortality, 17·8			

As to the distribution of the 23 deaths throughout the year, it is noteworthy that not a single death occurred in the months of July and August, although 24 cases were admitted in those months.

The extreme malignancy of some of the cases is illustrated by the entries in Table III., from which we learn that the total duration of the stay in hospital before death of 7 patients suffering from scarlet fever was only 10 days and 6 hours, an average of 35 hours in each case.

(b.) *Measles*.—The fluctuation in the number of cases of measles admitted has been singularly small of late years. In 1877–78 42 patients were treated, in 1878–79 the number fell to 35, in 1879–80 there was a further slight decrease to 30, and in the past year the admissions were 32. The cases call for little remark. Happily the type of the disease was mild, and only 2 deaths occurred, the mortality being 6·2 per cent. against 3·3 in the previous year, and 25·7 per cent. in 1878–79. It is right to mention that this last high figure was caused by an excessive mortality among very young children admitted in January, 1879, from the

South Dublin Union Workhouse. In that month 18 children were admitted, of whom 9 died—8 being under 5 years of age.

TABLE X.

Showing the Number Admitted and Dead of Measles, of both Sexes, and at different Ages, for the year ending 31st March, 1881.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent	Ages	No. Admitted	No. Died	Mortality per cent
Under 5 - -	3	1	33·3	Under 5 - -	3	1	33·3
5 and under 15	10	—	—	5 and under 15	4	—	—
15 „ 20	2	—	—	15 „ 20	2	—	—
20 „ 40	3	—	—	20 „ 40	4	—	—
40 „ 60	1	—	—	40 „ 60	—	—	—
60 „ 80	—	—	—	60 „ 80	—	—	—
Total, -	19	1	5·2	Total, -	13	1	7·6
Total No. Admitted, - 32		Total No. Died, - - 2		Average Mortality, - 6·2			

Of the 32 patients treated during the past year, 19 were admitted in the months of April, May, and June—a season when measles is most prevalent, other things being equal.

(c.) *Smallpox*.—The most gratifying feature in the annals of the hospital for the past year is the decline of that destructive and long-continued epidemic of smallpox, which had taxed the resources of the institution so severely for three years. In 1878–79 the admissions were 1,509, and the deaths numbered 357; in 1879–80 the admissions were 600, and the deaths numbered 119. In the former year the death-rate was 23·6 per cent., in the latter year it was 19·8 per cent. During the past year 411 patients were admitted suffering from smallpox. The deaths were 88, or at the rate of 21·4 per cent. Thus we notice a considerable decline in the number of cases, while the death-rate was unfortunately higher than in the previous year.

Table XI. presents a statistical review of the recent epidemic. It will be observed that a serious recrudescence of the outbreak took place at the beginning of the hospital year; the monthly admissions rose from 31 in March, 1880, to 66 in April, 109 in

May, and 112 in June. With the advancing summer a sudden and considerable decrease in the admissions occurred—the numbers being, in July, 53, and in August, 16. After the latter month only sporadic outbreaks of the disease furnished cases to the hospital—the maximal number of admissions being 15 in January, 1881. A study of the last column in Table XI. justifies the hope that the epidemic has at length passed away. Some idea of its persistence and severity may be gained from a comparison of Table XI. with Table XII., which illustrates the duration and magnitude of the former epidemic of 1871–73. Within 21 months, from April, 1872, to December, 1873, inclusive, 751 patients were admitted; within 53 months, from November, 1876, to March 1881, inclusive, 2,801 patients were admitted.

TABLE XI.

Showing the Number of Cases admitted per Month to Cork-street Hospital since the commencement of the present Epidemic.

	1876–77.	1877–78.	1878–79.	1879–80.	1880–1.
April, - - -	—	3	175	72	66
May, - - -	—	4	178	90	109
June, - - -	—	3	167	65	112
July, - - -	—	2	168	29	53
August, - - -	1	4	86	36	16
September, - - -	0	2	48	71	9
October, - - -	0	3	54	54	6
November, - - -	3	8	76	37	9
December, - - -	5	23	152	36	5
January, - - -	8	19	237	45	15
February, - - -	5	76	94	34	6
March, - - -	7	106	74	31	5

TABLE XII.

Showing the Number of Cases of Smallpox admitted per Month to Cork-street Hospital during the Smallpox Epidemic of 1871–73.

	1870–71.	1871–72.	1872–73.
April - - -	—	7	65
May - - -	—	5	69
June - - -	—	7	64
July - - -	—	1	34
August - - -	—	4	16
September - - -	—	8	7
October - - -	—	41	7
November - - -	—	59	3
December - - -	—	78	8
January - - -	—	81	2
February - - -	1	90	1
March - - -	1	97	0

TABLE XIII.

Showing the relation between the Type of the Disease and the Mortality.

<i>From 1st April, 1880, to 31st March, 1881.</i>					
Varieties	Number of Cases	Proportion per cent. of all the cases	Recovered	Died	Mortality per cent.
Discrete - - -	276	67·1	273	3	1·0
Confluent - - -	68	16·5	30	38	56·0
Malignant - - -	67	16·4	20	47	70·1
Total - - -	411	100·0	323	88	21·4
<i>From 1st April, 1876, to 31st March, 1881.</i>					
Discrete - - -	1,625	57·7	1,611	14	·8
Confluent - - -	857	30·5	513	344	40·1
Malignant - - -	333	11·8	80	253	75·9
Total - - -	2,815	100·0	2,204	611	21·7

Table XIII. and those which follow it illustrate the principal facts connected with the epidemic from its commencement to the close of the official year. In Table XIII. the disease is classified as "Discrete," "Confluent," and "Malignant." In the year ending 31st March, 1881, 411 cases were treated, of which 67·1 per cent. were of the discrete variety, 16·5 per cent. were confluent, and 16·4 per cent. were malignant. The mortality amongst the discrete cases was only *one* per cent. Three patients died—of these one, a woman aged 40 years, had suffered from phthisis for 3 years; another, a male aged 30, died of uræmic convulsions, having bathed at Clontarf while actually ill; and a third really died of scarlatina. The mortality was 56·0 per cent. among the confluent, and 70·1 per cent. among the malignant cases. The mortality among all the cases was 21·4 per cent., being about equal to that of the outbreak of 1871–73 (21·6), and to that of the recent epidemic, from its origin in 1876 (21·7). The second portion of this table is well worth an attentive study. It shows that of 1,625 cases of discrete smallpox only 14 proved fatal, the mortality not being *one* per cent. (0·8); whereas, of 857 confluent

cases, 344 ended in death, the mortality being 40·1 per cent., and of 333 malignant cases 253 died, the mortality rising to 75·9 per cent.

TABLE XIV.

Showing the Relation between the Sex of the Patients, the Type of the Disease, and the Mortality.

<i>From April 1st, 1880, to March 31st, 1881.</i>													
SEX	DISCRETE			CONFLUENT			MALIGNANT			TOTAL			
	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Recovered	Died	Mortality per cent.
Males -	137	1	·7	35	22	62·9	29	20	68·9	201	158	43	21·3
Females	139	2	1·4	33	16	48·4	38	27	71·0	210	165	45	21·4
Total -	276	3	1·0	68	38	56·0	67	47	70·1	411	323	88	21·4
<i>From April 1st, 1876, to March 31st, 1881.</i>													
Males -	896	6	·6	471	194	41·1	178	133	74·7	1,545	1,212	333	21·5
Females	729	8	1·0	386	150	38·9	155	120	77·4	1,270	992	278	21·1
Total -	1,625	14	·8	857	344	40·1	333	253	75·9	2,815	22,04	611	21·7

In Table XIV. we have statistics as to the relative incidence of the different forms of the disease on the sexes. During the year there was a singular accord between the numbers of males and females attacked by the disease in general—201 males, and 210 females. This accordance is observed, however, only in connexion with the discrete and confluent varieties of smallpox, which attacked 172 males and 172 females. In the case of malignant smallpox the numbers by no means so closely corresponded—only 29 males suffering from this form, compared with 38 females. The mortality of the malignant cases was 68·9 per cent. among males, and 71·0 per cent. among females. As was noted in the Report for 1878–79, this was no doubt due to the occurrence of cases of abortion, premature confinement with hæmorrhage, and menorrhagia.

TABLE XV.

Showing the relation between Vaccination, the Sex of the Patients, and the Type of the Disease.

<i>From April 1st, 1880, to March 31st, 1881.</i>							
	MALES			FEMALES			
	Total	Confluent	Per cent.	Total	Confluent	Per cent.	
Vaccinated - - -	168	17	10·1	179	20	11·1	
Unvaccinated - -	33	18	54·5	31	13	41·9	
Total - - -	201	35	17·4	210	33	15·7	
<i>From April 1st, 1876, to March 31st, 1881.</i>							
Vaccinated - - -	1,276	307	24·0	1,027	245	23·8	
Unvaccinated - -	269	164	60·9	243	141	57·9	
Total - - -	1,545	471	30·4	1,270	386	30·3	

Table XV. brings out two interesting points—first, the lessening severity of the disease as it attacks vaccinated individuals toward the close of the epidemic; secondly, the notably larger proportion of unvaccinated males who suffered from confluent smallpox. Taking the whole epidemic, we see that 24·0 per cent. of vaccinated males, and 23·8 per cent. of vaccinated females, had the disease in a confluent form; while in the year ending 31st March, 1881, the corresponding figures were only 10·1 per cent. of vaccinated males, and 11·1 per cent. of vaccinated females. The milder type of the disease among unvaccinated cases is also shown to a less extent. Again, during the entire epidemic, 60·9 per cent. of unvaccinated males suffered from confluent smallpox, compared with 57·9 per cent. of unvaccinated females. In 1880–81, the difference between the sexes was even much more striking—namely, 54·5 per cent. of males, and 41·9 per cent. of females.

Table XVI. illustrates the influence which vaccination exercises on the prevalence and severity of smallpox. It is a double table—the first part referring to the official year; the second part taking in the whole period of the late epidemic.

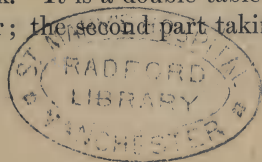


TABLE XVI.

Showing the Relation between Vaccination and the Prevalence and Severity of Smallpox.

From 1st April, 1880, to 31st March, 1881.												
	DISCRETE			CONFLUENT			MALIGNANT			TOTAL		
	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.
Vaccinated -	261	3	1·1	37	15	40·5	49	33	67·3	347	51	14·7
Unvaccinated	15	—	—	31	23	69·9	18	14	77·7	64	37	57·8
Total -	276	3	1·0	68	38	56·0	67	47	70·1	411	88	21·4
Per cent. vaccinated in each class	} 94·5			} 54·4			} 73·1			} 84·4		
From April 1st, 1876, to March 31st, 1881.												
Vaccinated -	1,539	13	·8	552	127	23·0	212	146	71·1	2,303	286	12·4
Unvaccinated	86	1	1·1	305	217	61·3	121	107	88·4	512	325	63·4
Total -	1,625	14	·8	857	344	40·1	333	253	75·9	2,815	611	21·7
Percent. vaccinated in each class	} 94·7			} 64·4			} 63·6			} 81·8		

It will be observed that in 1880-81, the mortality was 14·7 per cent. among the vaccinated cases, and 57·8 per cent. among the unvaccinated cases. From 1st April, 1876, to 31st March, 1881, the corresponding figures are 12·4 and 63·4 per cent. respectively. Of every 100 patients who had discrete smallpox, 94·5 were vaccinated in 1880-81, and 94·7 in 1876-81. Of every 100 patients who had confluent smallpox, 54·4 were vaccinated in 1880-81, and 64·4 in 1876-81. The percentage of vaccinations among the malignant cases was higher in 1880-81—namely, 73·1; but in the longer period it was only 63·6. Of every 100 patients admitted in 1880-81, 84·4 were vaccinated;

and throughout the epidemic 81·8 of the patients had been vaccinated. To those who believe that vaccination is a certain preventive against smallpox, these facts must prove sufficiently startling. To the opponents of vaccination they may furnish an argument, which is at best, however, only fallacious. If we calmly and dispassionately reflect on the matter, we must come to these conclusions—first, that vaccination, like a previous attack of smallpox itself, is only a *temporary and imperfect preventive* against smallpox; secondly, that the operation should be repeated *at least once* in a lifetime to keep up its protective efficacy; thirdly, that there can be no doubt as to the lessening of the severity and fatality of smallpox due to even one vaccination.

In this connexion, allusion may be made to an article in the May number of the *Fortnightly Review*, by Dr. Charles Cameron, M.P. for Glasgow, under the title, “Has our Vaccination Degenerated?” Of this paper, Dr. George F. Duffey gave a *précis* in *The Dublin Journal of Medical Science* for June, 1881, Vol. LXXI., p. 567.

TABLE XVII.

Showing the Relation between the Ages of the Patients, Vaccination, and Mortality.

<i>From April 1st, 1880, to March 31st, 1881.</i>							
Ages	Total	Per cent. at each Age	Vaccin- ated	Per cent. Vaccin- ated	Died	Mortality per cent.	
Under 5 - - -	32	7·8	13	40·6	20	62·5	
5 and under 10 - -	42	10·3	28	65·9	16	38·0	
10 „ 15 - -	62	15·0	57	91·9	3	4·8	
15 „ 20 - -	99	24·1	93	93·9	12	12·1	
20 „ 30 - -	118	28·7	105	88·9	23	19·5	
30 „ 40 - -	37	9·1	34	91·9	9	24·3	
40 „ 50 - -	17	4·1	13	76·4	5	29·4	
50 and upwards - -	4	·9	4	100·0	—	—	
Total	411	100·0	347	84·4	88	21·4	

TABLE XVII.—*continued.*

<i>From April 1st, 1876, to March 31st, 1881.</i>								
Ages	Total	Per cent. at each Age	Vaccin- ated	Per cent. Vaccin ated	Died	Mortality per cent.		
Under 5 - - -	206	7·3	75	36·4	134	65·0		
5 and under 10 - -	294	10·4	205	65·9	75	25·5		
10 „ 15 - -	379	13·1	336	88·6	33	8·7		
15 „ 20 - -	632	22·4	570	90·1	67	10·6		
20 „ 30 - -	885	32·1	770	87·0	178	20·1		
30 „ 40 - -	268	9·5	226	84·3	80	29·8		
40 „ 50 - -	106	3·7	87	82·0	30	28·8		
50 and upwards - -	45	1·5	34	75·5	14	31·1		
Total - -	2,815	100·0	2,303	81·8	611	21·7		

In Table XVII. the controlling influence of vaccination over the fatality of smallpox is still further exemplified, and in this instance in connexion with the question of age. In the year 1880–81, 32 children under 5 years of age were admitted, of whom only 13 or but 40·6 per cent. were vaccinated. Twenty of these children died, the death-rate being 62·5 per cent. During the entire epidemic the corresponding statistics are—admissions, 206; cases vaccinated, 75—being only 36·4 per cent.; deaths, 134—mortality being 65 per cent. Can there be any doubt that these enormous death-rates were due to non-vaccination and to tender age? Looking down through the Table we find that the lowest death-rates correspond with the periods of adolescence and the prime of life, when also the percentage of vaccinations reaches a maximum of about 90. The high ratio of vaccinated cases in advanced life is shown by the Table to notably reduce the fatality, which in old age might be expected to become excessive.

In last year's Report a table appeared for the first time, which went to prove that death was not the only calamity to which the unvaccinated victims of smallpox were doomed. That table illustrated the tediousness of the recovery of several non-vaccinated patients who indeed escaped with their lives, but were fated to

pass through weeks or even months of suffering before they were fully convalescent. Two among this group of patients were still in the hospital when last year's Report was printed; one remained under treatment for 52 days, the other was discharged after a sojourn of *nine months and nine days*! This unfortunate sufferer had as many as 42 large abscesses on his body as a sequel to the smallpox, but he happily at length recovered under antiseptic treatment. Table XVIII. contains scarcely less painful instances of protracted convalescence which came under observation in the past year. In one case 68 days, in another 77 days, and in a third 106 days were spent in hospital by these victims of non-vaccination smallpox.

TABLE XVIII.

Protracted Duration in Hospital of Non-Vaccinated Recoveries.

Registry No.	Days in Hospital	Registry No.	Days in Hospital
89	47	312	68
94	36	334	40
100	33	341	77
105	43	451	35
108	43	495	39
213	58	500	36
237	67	525	106
260	79	540	36
292	60	1,053	39

The physicians were seldom called upon during the year to distinguish between smallpox, on the one hand, and typhus, or measles, on the other; but in future should this happen, they will be relieved of much responsibility and anxiety by means of the admirable Observation Wards which were opened some months ago for the temporary reception of doubtful cases.

CONCLUSION.

Once more it is the privilege of the writer of this Report thankfully to record the fact that during the past year no accident happened within the hospital precincts, nor did anything occur to call for public comment or inquiry.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON OPHTHALMOLOGY.

Refraction of the Eye: its Diagnosis, and the Correction of its Errors, with a Chapter on Keratotomy. By A. STANFORD MORTON, M.B., F.R.C.S. Ed. London: H. K. Lewis. 1881. 8vo. Pp. 57.

Ophthalmic Test Types and Colour Blindness Tests. William Wood and Co., New York. Copyright. 1880.

Transactions of the American Ophthalmological Society. 16th Annual Meeting. Newport: 1880. 8vo. Pp. 174.

Hemiopia: Mechanism of its Causation, on the Theory of Total Decussation of the Optic Nerve Fibres in Optic Tract at the Chiasma. By W. DICKENSON, M.D. Reprint. St. Louis. 1881.

Short Sight in Relation to Education. An Address to the Birmingham Teachers' Association. By DR. P. SMITH. 1880. Pp. 35.

1. WITH scarcely a superfluous word Dr. Morton has given, in less than sixty pages, a very complete manual for the diagnosis of errors of refraction—one that we should like to see in the hands of every medical student attending an ophthalmic hospital; for it is only by actually working out individual cases, under the guidance of some book of this kind, that a student can really grasp the significance of the errors of refraction, and attain any reasonable skill in their diagnosis.

This work contains nothing new, except the first intelligible description of keratotomy (better termed retinoscopy) that has appeared in English; and as the method is novel in this country, and of considerable utility in testing the refraction of eyes and the suitability of the glasses ordered to correct anomalies, we shall briefly state the principles upon which it is based.

The light of a distant lamp thrown upon the retina by a concave ophthalmoscopic mirror of 22 cm. focal length, the observer being 1 m. 20 cm. distant from the patient, illuminates a portion of the

patient's retina. If the mirror be rotated, this illuminated area moves in the opposite direction to the direction of rotation; and if the patient be hypermetropic or emmetropic, the observer sees it so moving as he gets an erect image of the patient's retina. But if the patient be myopic (at least as much as 1 D, or upwards), the image of the patient's eye is inverted, and the observer of course sees the illuminated area moving in the direction opposite to that in which it really moves; that is to say, he sees it moving in the same direction as the mirror is rotated. If the myopia is less than 1 D, the inverted image of the patient's retina is so close to the observer's eye that he cannot get any distinct view of it, or the rays of light actually enter his eye before converging to a focus, so that in these very low degrees of myopia the illuminated spot moves in the same direction as it does in hypermetropia or emmetropia. If the observer goes further away than 1 m. 20 cm. from the patient, he throws so little light into the patient's eye that it becomes practically impossible to observe these movements. It is curious that neither Dr. Morton nor, so far as we know, any of the other writers on the subject, has noticed that this difficulty can easily be overcome, either by using a larger mirror with a longer focus, or by placing the lamp between the patient and the observer, so as to throw the inverted image of the flame nearer to the patient's eye. Thus in a case of myopia, -3.5 D, which we examined to test this point, we found that the ordinary retinoscopy (at 1 m. 20 cm. distance from the patient, the lamp being behind the patient, and the focal length of the mirror being 33 cm.), gave emmetropic reflection when the patient's eye was armed with a glass of -2.5 D. When the observer moved to 2 m. distance from the patient the light was so faint that no conclusion could be drawn; but on then placing the lamp half way between the observer and the patient it was found that no glass weaker than -3.5 D gave the emmetropic movement to the illuminated spot.

The profession should be the more grateful to Dr. Morton for the admirably concise and lucid exposition he has given of this subject, as it has been rendered unreasonably obscure by a paper published last year in the Royal London Ophthalmic Hospital Reports by a Dr. Forbes, whose description, as a whole, is so confused as to be quite unintelligible, although every now and then sentences occur which raise delusive hopes that the author really does understand what he is writing about. It is not worth while going through

this article to clear up Dr. Forbes' misconceptions, but there is one fact he mentions which appears curious and, as it may be thought to detract from the value of retinoscopy, is worthy of a rational explanation. The movements of the illuminated area on the patient's retina when the observer uses a plane mirror, are exactly the reverse of what they are when a concave mirror is used. To understand why this occurs one must realise what the effect of the rotation of the mirror in the two cases is. In the case of the concave mirror it is to displace the source of illumination (that is to say, the real inverted image of the lamp) in the same direction as the mirror is rotated, and in the case of the plane mirror it is to displace the source of illumination (that is, the virtual erect image of the lamp) in the opposite direction to the mirror's movement. It is obvious that in the first case the illuminated area on the retina must move in the opposite direction to the mirror's movement, while in the second case it must move in the same direction. As the observer in an emmetropic or hypermetropic eye sees the motion as it really takes place, he of course, when using a plane mirror, sees the illuminated area travelling in the same direction as the mirror, and when using a concave mirror sees the opposite. Dr. Forbes also makes an attempt to explain this fact; but, after several readings, we have been compelled to give up in despair any hopes of understanding what he means by it. A writer may be right or he may be wrong, but he should be intelligible, and he should have in his own mind some fairly definite line of demarcation between what he knows he knows, and what he knows he knows not.

2. In the compass of a small cardboard box Mr. Wood has packed the most complete collection of Ophthalmic Test Types we have yet seen offered to the medical public. It contains Jaeger's test types, nearly all Snellen's, Green and Wecker's astigmatic tests, and a collection of coloured wools, chosen according to Holmgren's directions, for the detection of colour blindness. In addition there are eight spherical glasses, by whose combinations every number (+ or -), from 0.5 D. to 9 D, can be obtained to test refraction.

To all except specialists in ophthalmic surgery the value of these test types is much enhanced by an explanatory text, written by Dr. Cutter, and a paper on "How to Choose Glasses, being Suggestions to Practical Opticians," by Dr. Noyes.

The first part of Dr. Cutter's explanation, relating to the test type,

is taken almost *verbatim* from the first edition of Snellen's Optotypi, and the part referring to achromatopsia is a reprint of a portion of Dr. Joy Jeffries' admirable little compilation on colour blindness, reproducing, word for word, Helmholtz's views upon the theory of colour perception, and Holmgren's directions for testing for its absence. This is a faithful copy of Joy Jeffries' work, except one obvious misprint at page 15—"He who in the second test selects with purple only *green* and *gray*, or one of them, is completely red blind." Of course *blue* and *violet* should be read for *green* and *gray*. Dr. Cutter has fallen into an error in using the term absolute to express the sum of the manifest and the latent hypermetropia. As every one who has read Donders' work is aware, absolute hypermetropia is that in which, even with the utmost convergence, accommodation for parallel rays cannot be obtained. It gives one quite a shock to come across mistakes of this description in a paper which is so accurate, while its author restricts himself to copying the work of others, and throws a doubt over all the statements made until they have been proved correct by comparison with the original sources from which the information has been drawn.

We cannot give an unqualified approval to Dr. Noyes' "Suggestions." He is very particular in frequently insisting upon the advisability of the opticians, for whose instruction he writes, sending their customers to consult a medical man in certain eventualities, and he commences the chapter on the choice of glasses by stating, in general terms, "that the efforts of the optician will be limited to persons who do not speak of pain as a prominent symptom, who do not complain of extreme fatigue, and who do not have double sight; and, finally, he will cease his efforts when he cannot by any glasses give correct vision for distance." We are very strongly of opinion that the efforts of the optician should be still more limited, and would lay it down as a first principle that no young person, under twenty years of age, should get myopic glasses from an optician without the advice of a competent oculist. In this context it is very astonishing that Dr. Noyes makes no mention of the frequency of apparent myopia, due to spasm of the ciliary muscle, which is only to be detected either by producing paralysis of that muscle (by atropine), or by the use of the ophthalmoscope, neither of which means is generally within the reach of an optician. Truly the average American tradesman must be a cleverer person than our Britisher if the oculists on the other side

of the Atlantic do not frequently meet with cases of hypermetropia armed by opticians with the most inappropriate myopic glasses. Too much stress cannot be laid upon this point. Only a few days ago the writer of this review saw an intelligent young man who had been for two years using myopic glasses of -3.50 D to assist eyes which possessed hypermetropia of 1.75 D and 2.25 D respectively. For six months of this time he used the glasses even for reading, following to his cost a most injudicious piece of advice, given in this paper by Dr. Noyes, to the effect, that "young persons needing glasses stronger than -2.5 D [as both the patient and the optician in this case were agreed] should wear them all the time." It is needless to comment upon this case; the facts speak for themselves, and might be considered a practical demonstration of the principle laid down above, that no young person should ever be allowed to purchase myopic glasses without the advice of a competent oculist.

For the rest of Dr. Noyes' suggestions we have nothing but praise, and would recommend them to the consideration not alone of the practical optician, but of the practical medical man who does not happen to be a specialist in ophthalmic surgery.

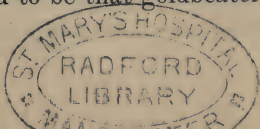
3. Nothing can be better adapted to promote those feelings of humility and that absence of boastfulness with which a Medical Society should usher itself into the scientific world, than the reflection that in the very year in which the Ophthalmological Society of the United Kingdom held its inaugural meeting, the American Ophthalmological Society was holding its sixteenth annual meeting. A great deal of valuable work has been done in these sixteen years by our transatlantic brethren, and not the least valuable is that contained in the Transactions for 1880. The first paper is an extremely interesting one, by Dr. David Webster, on the "Sympathetic Inflammation following Operations for Cataract," of which Dr. Webster records eleven cases. In four of these both eyes were lost; in two both recovered; in one the sympathetically-inflamed eye was lost, while the other retained good vision; while in the four remaining cases, one or the other, or both, were severely damaged or lost. In the course of the discussion on this paper six other cases were spoken of, and Dr. Agnew stated that his impression was, that the cases in which sympathetic inflammation occurred ranged between two and three per cent. of the cases in which the eye operated upon was a total loss. He also thought

that everyone present must have seen cases where the loss of an eye had followed an operation for cataract by another physician. If that be so, this disease must, we think, be commoner in America than in this country; for although where there are a plurality of oculists it is most likely that these cases do not usually come under the observation of the original operator, so that we can easily account for not meeting with these cases in our own practice, still we think it remarkable that we have never seen a case of it in the practice of other surgeons, although we frequently see patients upon whom they have operated unsuccessfully, and have, on not a few occasions, enucleated the blind eyes as a matter of precaution. It would be well if every surgeon meeting with such cases were to communicate with the operator, as by the general observance of this rule it would in time become possible to give accurate statistics of the frequency of the disease.

There are two papers on "Transplantation of Skin, by Wolfe's Method," and in the subsequent discussion other cases are mentioned, so as to make up the total number under discussion to thirteen. Of these all but four were either completely or partially successful. The only case in which we have had the opportunity of assisting at this operation, and, so far as we know, the only case which has been operated on by this method in this country, was unsuccessful; but if anything like such a percentage of success as seventy can be reached by different operators, there is evidently a better future for the operation here than the case alluded to would lead one to expect.

Dr. Howe compares his experience with that of the other writers on the subject, and lays down the following conditions of success:—As to the surface of the wound—(1) that it be clean and free from adipose tissue; (2) that its base be even; (3) that there be little or no hæmorrhage at the moment of transplantation. As to the flap—(1) that it be at least one third larger than the wound; (2) that its inner surface be clean and free from fat; (3) that it be subject to no undue violence; (4) that it be secured in its new position without delay. Finally, as to adapting the parts to each other—(1) that the edges should fit evenly; (2) that they should be secured firmly; (3) that the parts should be kept warm and dry for at least twenty-four hours.

Drs. Agnew and Noyes made use of scissors to form the flaps in these cases, and the general opinion seemed to be that goldbeaters' skin was the best dressing to use.



Dr. Heyle contributes a paper on "Intraocular Lipæmia," with the description of the ophthalmoscopic appearances in a case observed by him. He contrasts them with the appearances seen in leuchæmia, and lays down the theory that the retinitis which occurs in diabetes is the result of fat emboli in the retinal vessels.

Dr. Little describes two cases of paralysis—one of the superior oblique and one of the inferior oblique. The second was only a partial paralysis, and the first was not a case of pure paralysis of the superior oblique; for the double images diverged towards their upper ends, the reverse being the case in paralysis of the superior oblique. Apropos of a fatal case of glioma, Dr. Agnew mentioned the very interesting fact that a child, both of whose eyes he enucleated for double glioma, in 1874, was still alive, being seven years old.

Dr. Knapp read a paper on "Complete Blindness from Ischæmia Retinæ," with perfect recovery, and an abstract of eight cases of sclerotomy for glaucoma. He considers this operation indicated in simple chronic glaucoma with a narrow field of vision and marked excavation, in hæmorrhagic and acute glaucoma, and in the glaucoma of young persons. Very few of the other members of the Society seemed to have performed the operation at all.

Dr. Agnew's paper on the "Insufficiency of the Ophthalmoscope as the Sole Test of Errors of Refraction" calls attention to the well-known fact that the accommodation of the patient very frequently is not at rest during an ophthalmoscopic examination; the only remarkable point is that anyone should have thought that it was.

4. In writing on "Hemiopia," Dr. Dickenson lays no claim to originality, but only professes to give the results he has arrived at from a faithful perusal of the literature of the subject. This perusal seems to have been restricted to Schwalbe's article in *Græfe and Sæmisch's Handbuch der Augenheilkunde*, and the brochure would be more valuable if a little mention had been made of the clinical and experimental data which form the foundation of the semi-decussation theory—for instance, Nicati's experiments on kittens, which if accepted may be regarded as crucial. Nicati divided the chiasma in the middle line by an instrument cutting upwards through the palate, observed that the animal still had the power of sight, and then established the fact, that he had completely divided the chiasma, by *post mortem* examination. If this has been done in

only one case it is sufficient to disprove the total decussation theory in cats, while in man clinical facts and pathological examinations tend rather more to uphold the partial than the total decussation hypothesis, which really has hardly anything to base itself upon except Biesiadecki's anatomical investigations.

5. For some years past the labours of Dr. Hermann Cohn in Germany, and the writings of Dr. Liebreich in this country, have directed the attention of teachers and parents, as well as of medical men, towards the subject of "Short Sight in Relation to Education;" but it would be well if more attention were paid to it, and there can be no better means of diffusing the knowledge of its importance than addresses, such as this of Dr. Smith's, delivered to professional teachers by competent medical men. A lecture such as this should be an annual event in every training school.

The Bacteria. By DR. ANTOINE MAGNIN. Translated by GEORGE M. STERNBERG, M.D. Boston: Little, Brown, & Co. 1880. 8vo. Pp. 227.

THIS work does not apparently aim at any originality, but professes simply to give a *résumé* of the more important facts which have been already acquired as to the morphology and physiology of bacteria—these minute organisms which are now supposed to play so important a part in the economy of nature, and more particularly in the causation of disease. The book consists of an introduction, a short historical sketch of the subject, and two parts—the first dealing with the morphology and classification of bacteria, the second with their physiology, including their action in fermentation, putrefaction, and pathological processes.

Bacteria, whether round or rod-shaped, have a cellular structure, a cell wall of cellulose, a protoplasmic contents, and in many cases possess ciliary appendages. *Apropos* of this latter peculiarity, an extract from the paper of Dallinger and Drysdale on the flagella on *Bacterium termo* is given, together with a reproduction of some of their drawings. Bacteria occur either joined together in chains, or in masses held together by a viscous matter probably secreted by their protoplasm (zoogloea), or lying close together so as to form a membranous scum on the surface of a fluid (mycoderma), or in swarms. This latter condition differs from zoogloea in that the particles can move freely, as the viscous binding material is absent.

In the classification of bacteria great differences have arisen between the various writers, owing to the difficulties in determining whether the apparently different forms were really different species, or only various stages in the growth and development of the same organism. This latter view has, as is known, been advanced with great force by Billroth, and is held also by many other microscopists and botanists. Cohn makes of the bacteria a natural family, and divides them into four tribes:—1. *Sphaerobacteria*, or spherical bacteria, including only one genus, micrococcus, whose species are divided into three series—viz., (a) pigmentary micrococci or chromogenes, (b) the micrococci of fermentation or zymogenes, and (c) the micrococci of contagious affections or pathogenes. 2. *Microbacteria*, or bacteria in short rods, including one genus bacterium, with two species, *B. termo* and *B. lineola*. 3. *Desmobacteria*, or bacteria in short filaments, including the genera bacillus with straight filaments, and vibrio with undulating filaments—the first composed of *Bacillus subtilis*, with *B. anthracis* as a variety, and *Bacillus ulna*, the second *Vibrio rugula* and *V. serpens*. 4. *Spirobacteria*, or bacteria in spiral filaments, including the genera spirillum and spirochæte—these might be united into one genus, comprising sp. plicatile, tenue, undula, and volutans.

Cohn has subsequently given a much more elaborate classification, including all the lower vegetable organisms which multiply by fission (Schizophytes), whether they contain chlorophyll or not. This, however, is unsuited to a small work like the present, and the author, dealing only with those forms which contain no chlorophyll, describes them under the four primary divisions of Cohn, as given above, adding a short account of some other colourless schizophytes not included in these, such as sarcina, ascococcus, streptothrix, &c. In this description a full account will be found of the characteristics of all the bacteria, using the term in its freest sense.

The second part of the book treats of the physiology of bacteria. The author does not decide between the panspermists and the heterogenists, and thinks the question as to the existence of bacteria in the normal blood and tissues of the body must be, for the present, left unanswered.

As regards the disputed point whether there are bacteria which can live and thrive without free oxygen, it is suggested that the successive appearances of aerobies and anaerobies in an infusion, and the part played by each may be explained as due to a struggle

for existence between the microbacteria (aerobies) and desmobacteria (anaerobies).

There is much interesting matter in the chapter on the reproduction of the bacteria, and it is shown that they multiply not only by fission, but by spores developed in the filaments, and even by the formation of true sporangia, each containing several spores.

It has been stated by various authors that micrococci and bacteria develop into budding fungi (yeasts), or even moulds. These views the author considers to rest on no solid foundation. He says (p. 135):—

“The only change of form well demonstrated in the present state of science, and the only one which can be compared to natural polymorphism, such as it exists in a great number of fungi, consists in the transformation of spores into *Bacteria*, *Bacteridia*, *Vibrios*, &c., and in the different modes of grouping that the cells of bacteria take in becoming *zooglæa*, *mycoderma*, *leptothrix*, &c. To go further would be to lack prudence and scientific criticism.”

In the concluding chapter on the development of the bacteria in different media, the part which these organisms play in fermentation, putrefaction, and in medical and surgical diseases, is described. This, to the medical reader, most interesting part of the book strikes us as being rather meagre, particularly when we contrast it with the corresponding parts of Hiller's work, “*Die Lehre von der Fäulniss*,” but still much of interest will be found in it. As a final result, the author thinks that the part played by bacteria in fermentations, in putrefactions, in contagious diseases, and in surgical lesions, notwithstanding the considerable number of labours of which the bacteria have been the object in these different points of view, cannot yet be defined in a certain manner.

In conclusion, we cordially recommend to our readers this little book, in which they will find much information not readily accessible elsewhere. There is a very copious, although by no means complete, bibliography at the end of the volume, which will be found very useful. The translation is exceedingly good, and the translator has introduced several plates and many very beautiful microphotographs, taken by himself for the American National Board of Health, and reproduced here by permission of that body.

A Treatise on Diseases of Joints. By RICHARD BARWELL, F.R.C.S., Senior Surgeon and Lecturer on Surgery, Charing Cross Hospital. Second Edition. London: Macmillan & Co. 1881.

THE new issue of Mr. Barwell's book on Diseases of Joints is just now most acceptable, as it furnishes, from most competent authority, the fullest information of the bearing of antiseptic surgery on this most important group of diseases. Mr. Barwell's first edition was well received, and was admitted as an excellent text-book; it may therefore be taken as fairly exposing the principles of treatment applicable in joint disease, and the deformities resulting from it, as they were established twenty years ago. The new edition records the progress of the science and art of surgery in this department most faithfully. Inseparably united with antiseptic surgery are the facts on which are based the theories of pyæmia and septicæmia—conditions intimately associated with the diseases of joints. Mr. Barwell has done well in devoting a large space to the study of these subjects, and he places before his readers very clear and definite opinions on them. He affords just the kind of information that the practitioner who desires to keep himself posted in the progress of pathology as a guide to practice requires; at the same time he is careful to avoid any overstatement, as we notice, even in his preface. "Plainly," he says, "may it be foreseen that the doctrine of certain absorptive diseases, discussed in Chapter IV., will meet with criticism, even with scepticism." A reference to Chapter IV., which deals with pyæmic joint disease, and certain other affections originating in absorption of morbid matters, will convince many, even of the most sceptic, that the modern pathological views as to the origin of pyæmia bear the test of clinical investigation. In the group of pyæmic joint diseases Mr. Barwell includes with the forms commonly admitted as pyæmic the following:—Urethral pyæmia, urethral synovitis, metric synovitis, the synovitis of typhoid fever, and the exanthems. Of each of these groups he presents such a series of typical cases as will be found most instructive, and conclusive as to the justness of his views of their origin. We heartily endorse his statement as to the treatment of pyæmic joint disease:—

"Pyæmia, even in its more severe forms, is not a malady so necessarily fatal that the person should be left to fate, or treated perfunctorily and hopelessly. On the contrary, when a patient, with a wound of any description, but, *à fortiori*, with one of a sort which we know might prove

infective, has any symptom, such as a sudden rise of temperature, not otherwise accounted for, more especially if the pyrexia have been preceded by a rigor or rigors, he should be instantly subjected to sharp and energetic treatment."

The essentials of this are the local cleansing of the source of infection with carbolic acid, in some the local infiltration with the same, the internal administration of quinine in large doses, followed by the sulpho-carbolate of sodium. It is clear, then, that Mr. Barwell is no advocate for the principle of a masterly inactivity in dealing with the grave complications arising in surgical practice—a principle which would appear to be too often adopted. In the introductory chapter, on the Physiological Anatomy of Bone, the author corrects the error which he taught in the first edition, that the calcified layer of the articular cartilage, known as "Toynbee's layer," was traversed by tubes which afforded pabulum to the articular cartilage. Although abandoning this untenable doctrine—for no such tubes can be demonstrated—he still clings to the theory of nutrition of the cartilage, for which it served as the basis; for he says in a footnote—"In my former edition I described these as very fine tubules; therein was error. The markings are not tubes in the sense of continuous elongated hollows; nevertheless they are, I believe, pores permitting the transmission of fluid." In the view here expressed, as in the dogmatic statement, "that nothing can be more sure than that of all the joint diseases which fall under the surgeon's notice not one originates in the cartilage," the author appears to stand on debatable ground. Tubes are admitted to be wanting, but pores are present, because they are wanted to support a theory. Again, diseases confined to cartilage give rise to no symptoms, therefore they cannot originate joint disease. Such, assuredly, is illogical argument. In the present day it appears hardly necessary for an author to enter into the discussion as to the existence of the nuclei of bone cells, and of the cells themselves, for the teaching of all histologists admits their existence; yet Mr. Barwell spends some space, small no doubt, in needlessly discussing them. In fact, we think the author might well have omitted the physiological chapter, and so, to some extent, have lightened the weight of the volume—a matter he has to apologise for in his preface, and which is a serious drawback to the book.

Before closing this short notice of Mr. Barwell's work we would direct special attention to facts recorded by him, which go far to

prove a remarkable association between the occurrence of congenital phimosis and morbus coxæ in the boy. It has long been known that phimosis may induce symptoms somewhat simulating morbus coxæ. Mr. Barwell has shown good reason for the conclusion that phimosis may prove the exciting cause of the disease.

A Treatise on the Diseases of the Nervous System. By JAMES ROSS, M.D. With Lithographs, Photographs, and 280 Woodcuts. London: J. and A. Churchill. 1881. 2 vols. 8vo.

IN no department of medical study has the advance been in recent times so rapid and so certain as in the investigation of nervous diseases. This is due not only to the great ability and industry of the numerous workers, but also to the combination of methods followed; for not by clinical observation only has the progress been made, but physiological experiments, pathological investigation, and anatomical and embryological research have all lent their aid to the unravelling of the numerous intricate problems which beset on all sides the study of diseases of the nervous system.

As an outcome of all this labour, very many excellent systematic treatises on nervous diseases have been published in this as in other countries, besides innumerable monographs on particular diseases or classes of disease, but no work has yet appeared which equals in comprehensiveness and completeness that now before us.

Of course such a book as this must be mainly a compilation, and even if it were nothing more we should feel much indebted to Dr. Ross for having collected so much valuable material from such numerous and scattered sources, and for having arranged it in so ready a form for use. But the work is much more than a compilation—it abounds in original observations and reflections, and contains not only much new clinical matter, but also a great deal of original work in the minute anatomy and development of the nervous centres.

One of the most noteworthy features of the book is the large amount of space which is given to the anatomy and physiology of the different portions of the nervous system, so much so that there is no English work with which we are acquainted in which so full an account of the minute anatomy of the brain and spinal cord is to be found. We fully admit that a great deal of this minute anatomy is not founded on a very secure basis, that it abounds in lacunæ, and that many of the views at present held by anatomists

will, on further examination, undergo revision, still we feel that anatomy and physiology are the only sure foundation for clinical medicine, and we are convinced that the rapid advance in our knowledge of nervous diseases, as compared with other branches of medicine, has been due to the fact that the study of the former, much more than that of the latter, has been based on the teachings of anatomy and physiology.

In the first volume is contained the general pathology of the nervous system and the special pathology of the peripheral nerves, the latter being divided into two parts, the first dealing with diseases of the cerebro-spinal nerves, the latter with those of the sympathetic. The symptoms of irritation or interrupted conductivity of each nerve are fully described and illustrated by numerous engravings, showing the distribution of the nerves and the points where they or the parts supplied by them may be best acted on by electricity. The difficult problems connected with paralysis of the ocular and laryngeal muscles are explained in a peculiarly lucid manner. Among functional diseases of the cervical sympathetic the author classes hemicrania, Graves' disease, and unilateral progressive atrophy of the face—the latter, however, with much hesitation. Angina pectoris is made a symptom of disease of the thoracic part of the sympathetic.

In the second volume, which extends to a thousand pages, we find the special pathology of the spinal cord and medulla oblongata, and of the encephalon, while the concluding part deals with the diseases of the encephalo-spinal system, such as paralysis agitans, chorea, tetanus, hysteria, toxic disorders, &c. Here we have the result of the author's anatomical observations on six cases of hydrophobia. The changes consisted chiefly in the presence of leucocytes about the vessels in various parts of the nerve-centres, with atrophy of ganglionic cells. The morbid appearances are illustrated by a plate containing numerous drawings.

The anatomical and physiological introduction to the diseases of the medulla oblongata and cord occupies 80 pages, and that to the diseases of the encephalon 100. These chapters contain, as we have said, much new matter, and are a most valuable part of the book.

The system diseases of the cord are treated of under the headings Poliomyelopathies, among which we find pseudo-hypertrophic paralysis, and Leucomyelopathies, while acute ascending paralysis is placed together with acute and chronic diffuse myelitis as a mixed disease. In the chapter on Functional and Secondary Diseases of

the Cord the author admits a form of paraplegia following disease of the urinary organs and other viscera, which is functional, "caused by some mechanism not yet accurately determined, but which in the meantime may be called *reflex paraplegia*."

In the part on Diseases of the Brain the focal diseases are first dealt with, then the diffused diseases, and finally the diseases of the membranes. The focal diseases are considered first according to the nature of the lesion, under which head we find occlusion of vessels, hæmorrhage, and tumours; and secondly, according to the localisation of the lesion, whether in the peduncular fibres and internal capsule, in the cortex, in the basal ganglia, external capsule and claustrum, or in the parts below the tentorium. In these chapters the entire question of cerebral localisation is discussed in the fullest manner, and the symptoms caused by lesion in each part clearly laid down and illustrated by cases and drawings. Under the heading Diffused Disease of the Encephalon, we have chapters on Anæmia and Hyperæmia, Atrophy and Hypertrophy, Shock and Concussion and Encephalitis.

The work is illustrated by six plates, besides numerous wood engravings. Four of the plates are photographs, and give a considerable number of figures illustrating the deformities which follow progressive muscular atrophy, infantile paralysis, pseudo-hypertrophic paralysis, locomotor ataxy, paralysis agitans, and the contractions consecutive to hemiplegia. These figures are highly characteristic and instructive.

We feel that we can scarcely speak too highly of this work, which we think supplies a great want in our literature. It represents fairly and completely the present condition of our knowledge of nervous diseases, and it discusses the numerous doubtful questions connected with neuro-pathology impartially and with judgment. It is written in a singularly lucid, agreeable style, and in print, paper, and everything connected with its bringing out, is above reproach.

A Clinical Treatise on the Diseases of the Nervous System. By M. ROSENTHAL. With a Preface by PROFESSOR CHARCOT. Translated from the Author's Revised and Enlarged Edition, by L. PUTZEL, M.D. In 2 vols. New York: Wm. Wood & Co. 1879.

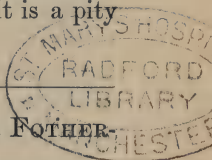
ALTHOUGH there is no scarcity of good English and American works on diseases of the nervous system, yet still we welcome a

translation of the excellent treatise of Prof. Rosenthal as a most valuable addition to the English literature of this subject. A work so well known and so justly appreciated as this is, needs but short notice from us, as its reputation rests on foundations which can be neither shaken nor made more secure by criticism. Prof. Charcot, in his preface to the French translation, bears strong testimony to the value of Dr. Rosenthal's work as a *clinical treatise*, the outcome not of theoretical speculation, but of prolonged observation of patients, and written for the assistance of clinical physicians. This judgment of so competent a critic is amply justified. The sections on treatment are short but precise, and contain much that will interest English readers, more particularly in the parts where hydrotherapeutics are discussed. This mode of treatment, which is scarcely at all followed out methodically in this country, deserves more attention, if we may judge from the great value set on it by German authorities as a means of relieving the symptoms of chronic nervous diseases. The translation appears to us to be very well done, and to be far above the average of American translations from the German. The translator has introduced several wood engravings, taken from various sources, and which add considerably to the value of the work. It is a pity that the index at the end of each volume is not fuller.

Aids to Diagnosis. Part I. Semeiology. By J. MILNER FOTHERGILL, M.D., M.R.C.P., &c. Pp. 75.

Aids to Diagnosis. Part II. Physical Diagnosis. By J. C. THOROWGOOD, M.D., F.R.C.P., &c. Pp. 61. London: Baillière, Tindall, & Cox.

To say that these two *brochures* are the best we have yet seen of the Students' Aids series will perhaps be faint praise, but their merits are of a positive order. Dr. Fothergill has an easy, graphic style of writing which makes him pre-eminently the students' friend. Their respective areas of information occasionally overlap, as hæmoglobulin and tube casts in urine are discussed as semeiology, while Dr. Thorowgood claims hæmoptysis as coming within his scope. We do not, however, admit the utility of these waistcoat-pocket cyclopædias. The tactus eruditus, the trained eye, the significance of *σημεία* (not *σεμεία*, as Dr. Fothergill has it), are to be only acquired by personal observation in the wards of the hospital, for which the short roads of grind-books are poor substitutes.



The Diseases of Children. By WILLIAM H. DAY, M.D., M.R.C.P.;
Physician to the Samaritan Hospital for Women and Children.
Pp. 752. London: Churchill. 1881.

IT requires more courage to write a book upon this subject than upon any other within the range of medical science. Gynæcology has a wide future still before it. Dermatology still may offer novelties in classification, but the diseases of children in view of the works of West, of Churchill, of Meigs and Pepper, of Lewis Smith, &c., offer but a barren prospect to an original worker. The more credit, therefore, is due to Dr. Day for attempting to glean in a field so exhaustively pre-occupied. His aim is to produce a book that shall be useful and readable rather than theoretical, so that while there is abundant evidence of judicious compilation from preceding writers, there is, especially in questions of treatment, a full record of his own experience. In the arrangement of his material there is nothing new. The two preliminary chapters are occupied with the hygiene of infants; the two following with the constitutional tendencies of weakly children; the fifth with the physiological process of dentition, and from this on to the end of the fifty-three chapters, into which the book is divided, the febrile, visceral, nervous, and diathetic maladies are systematically placed. *En passant* we commend the practice adopted by Dr. Day, of placing at the head of each chapter a short synopsis of its contents; it is a plan which contributes to the clearness of both readers and writers.

The author's experience of condensed milk is favourable; he believes that Swiss milk replaces mother's milk better than that of the ordinary stall-fed cows of large towns. If milk disagrees he adds a little lime water or dill water to the bottle. We have often found that the formation of curds in masses is effectively checked by the addition of barley water alone, unless an antacid is indicated as well. He does not (p. 54) share the increasing scepticism as to dentition being occasionally the cause of convulsions, and if "the tooth is nearly through, but still hidden, and the gum is red and tightly stretched over the tooth," he advocates the use of the gum lancet. Dr. Lewis Smith and most, we believe, of the American school have discarded this instrument altogether. On the treatment of infantile convulsions—a long standing battleground of therapeutists—the author is brief, not to say meagre. The warm bath and chloroform during the paroxysm, and the bromides of potassium and ammonium with chloral in the intervals

are all the remedies mentioned. Now in some cases bromides do not agree, while opiates, when the child is over four months old, produce the desired effect. *Veratrum viride*, likewise, should not be omitted; we have found two drop doses of its tincture given every hour of marked benefit.

The exanthemata are fully described, each in a separate chapter, and with due regard to the present state of our knowledge. The difficulty of diagnosing typhoid fever in young children, and of differentiating it from tuberculosis in particular, is fairly stated, and the practitioner is warned how its caprices in both initial symptoms and progress should make his prognosis a very guarded one. We think Dr. Day is almost too cautious in dogmatising. He almost apologises for stating "it would appear that the cases described under the head of gastric fever and typhoid fever are one and the same in their nature, progress, and termination. The stomach may be more involved at one time than at another, as evidenced by the prominent papillæ of the tongue, and the gastric disturbance and vomiting; but it is the same fever notwithstanding." We would have thought it was at the present day unnecessary to spend a paragraph in showing that the phrase "gastric fever" was either an euphemism of maternal solicitude or a veil for the want of a diagnosis on the medical attendant's part.

In the fifteenth chapter, under the heading of *Diarrhœa*, *gastro-enteritis*, in its different degrees, is detailed. In the sections describing diseases of the chest there is almost nothing forgotten. In the treatment of *pertussis* none of the "specifics" has been omitted. On the difficult subject of infantile paralysis Dr. Day does not contribute much of his own personal observation. He has known the attacks "follow cold and ulceration of the throat, diphtheria, and the eruptive fevers. Blows and falls upon the hip have produced this form of paralysis. In rickety subjects, with delayed dentition, a child may suddenly lose the use of a limb, and wasting and contraction continue until there is permanent deformity, such as club foot, necessitating division of the tendons." We cannot, however, agree with him that teething is not an uncommon cause. Strange to say there is no reference to congenital *phimosis* as the cause of any of the so-called reflex paralyses. If the disease is recognised in the early stages, when febrile symptoms are present, Dr. Althaus's plan of injecting *ergotine* subcutaneously is strongly recommended—a fourth of a grain of *Bonjean's* for a child under two years old. When the disease is advanced, it is generally

admitted that no benefit can be afforded except by galvanism and faradisation. The author might have been more explicit in his directions how to use the continuous current with most advantage, as from the faradic we can only hope for the arrest of muscular degeneration. He seems to prescribe electricity rather from a sense of duty than from sanguine expectations of benefit.

The volume closes with a short account of the most common affections of the skin. Spite of some redundancies and a few omissions the author may be congratulated on having produced not only a complete and faithful compilation, but also an eminently readable volume. There are a few old-fashioned terms—*e.g.*, “steel” when some salt of iron is meant; but these are small blemishes amid great excellences. We have no doubt it will be read with the interest which its style as well as its matter deserves.

WORKS ON ELECTRICITY.

How to use a Galvanic Battery in Medicine and Surgery. Second Edition. By HERBERT TIBBITS, M.D. J. & A. Churchill. 1879. Pp. 72.

A Practical Treatise on the Medical and Surgical Uses of Electricity. By G. M. BEARD, M.D., and A. D. ROCKWELL, M.D. Third Edition. Revised by A. D. ROCKWELL, M.D. With nearly 200 illustrations. New York: Wood & Co. 1881.

1. DR. TIBBITS has, we are glad to find, had occasion to bring out a second and improved edition of his Lectures. He has succeeded in conveying in a simple and concise form most of the information which every medical man should possess before he presumes to meddle with an agent so powerful for good and evil as electricity.

2. Within ten years three editions of Drs. Beard and Rockwell's joint work have been called for, but for the revision of this last edition Dr. Rockwell is alone responsible. On previous occasions we expressed at some length our opinion on the merits and demerits of this treatise, which has gained for its authors an established reputation. Two new chapters, on the Sequelæ of Acute Diseases and on Exophthalmic Goître, have been inserted, and various other changes and additions have been made, yet without increasing the size of the book, space being gained by omission and condensation. In a future edition the process of condensation might with great advantage be carried much further.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.^a

By C. A. CAMERON, M.D.; S.Sc.C., Cambridge; M.K.Q.C.P.I.;
Fellow and Professor of Hygiene and Chemistry, Royal College
of Surgeons in Ireland; Superintendent Medical Officer of
Health for Dublin; President of the Society of Medical Officers
of Health, &c., &c.

SEWAGE IN OYSTERS.

LARGE numbers of oysters collected by dredges off the coast of the county of Wexford are laid down in "beds" on the northern shore of the Bay of Dublin. When fully developed in these "Clontarf beds" they are removed for consumption to Dublin and other places. Formerly the Clontarf oysters were thriving molluscs, but during late years they have not done well, and great numbers of them die shortly after their translation from their native habitat.

Owing to the recent construction of many large sewers, the contents of which are discharged into the northern side of Dublin Bay, and also owing to the rapid development of the water-closet system in Dublin and its suburbs, the water of the Bay is yearly becoming more polluted with excrementitious and other offensive matters. These obnoxious substances are thrown up on the foreshores of the Bay. The river Liffey, which is the chief carrier of filth to the Bay, is steadily becoming more and more polluted. It is only a generation ago when mullets and other edible fishes were numerous in the river, where now they are rarely seen. Near the estuary there were numerous beds of oysters, which have become extinct, partly owing to their sites being now the "berths" of ships, but also owing apparently to the great pollution of the river.

An examination of some oysters taken from Clontarf and of the

^a The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.

water which covered them has afforded rather startling results. The oysters—a large and coarse variety—were taken from a place where the tide covers them to a height of about ten feet, and which during low water is nearly dry. In most of the oysters the brine had no peculiar odour, but in a rather large proportion there was a very slight, but distinctly fœtid odour, whilst in a few cases there was a strong and unmistakable odour of sewage. Examined microscopically the liquid in the oysters which had a fœtid odour was found to swarm with micrococci and other low organisms similar to those usually present in sewage.

The sea-water taken at the oyster beds when the tide was fully in was subjected to chemical analysis, and the following were the results arrived at:—

One imperial gallon (70,000 grains weight) contained, in addition to water—

			Grains
*Volatile matter at a red heat,	-	-	303·000
Fixed substances at do.,	-	-	2110·000
			<hr/>
Total solid matters,	-	-	2413·000
*Yielding—Albuminoid ammonia,	-	-	0·009
Saline ammonia, -	-	-	0·010

One gallon of the water taken, when the tide was fully out, from little pools containing oysters, was found to contain the following, exclusive of pure water—

			Grains
*Organic and volatile matters,	-	-	242·000
Fixed mineral substances, -	-	-	1406·000
			<hr/>
Total solid matters,	-	-	1648·000
*Yielding—Albuminoid ammonia,	-	-	0·090
Saline ammonia, -	-	-	0·300

Thus it will be seen that the albuminoid ammonia was ten times, and the saline ammonia thirty times, more abundant in the water taken when the tide was out, clearly proving that it was in great part composed of sewage. The large amount of solids in the “low water” may be accounted for by the evaporation of the surface water—the weather at the time being warm—concentrating the saline matter in the remaining water. The water taken when the tide was out had a decidedly sewage odour, and teemed with low forms of life.

Marine crustacean and molluscan animals are amongst the most active scavengers of our coast; they devour not only animalcules, but also particles of dead animals and vegetable matter contained in the water. In the case of crustaceans, this decomposing organic matter becomes reorganised into living tissue, and, therefore, these animals furnish wholesome food to man. Lobsters and crabs are also always cooked before being eaten. Oysters, cockles, mussels, and other lamellibranchiate molluscs are often eaten uncooked, and their shells enclose a liquid which is more frequently drunk uncooked than cooked. Although oysters when deserted by the tide instinctively keep their valves closed, they do not invariably do so, and, therefore, at low water, sewage trickling down the shore is likely to find its way into the interior of the open oysters. Now, if potable water and milk be vehicles in which it is possible that the germs of typhoid fever may exist, why may they not be sometimes present in the so-called juice of an oyster or cockle? Anyone may satisfy himself that sewage is constantly discharging over foreshores, in which various edible molluscs have their abiding place; and it is in the highest degree improbable that animals can always resist successfully the entry of polluted brackish water into their calcareous dwellings. Under all these circumstances we confess that we prefer to eat oysters taken from the lonely shores of Clare and Kerry, rather than from the sewage-polluted estuaries of rivers like the Liffey and the Thames. It may be that the illness which so many persons have experienced after swallowing oysters, believed to have been stale, was really due to the presence of sewage matter in the juice of the molluscs.

HOUSE DRAINS AND STREET-SEWER VENTILATORS.

Dublin is provided with excellent street sewers, but the house drains are in a defective condition. In many of the finest houses in the best quarters of the city, old-fashioned stone or brick drains still exist. The trapping arrangements are defective, and sometimes altogether wanting. Within the last two years ventilating openings have been made into the street sewers of Dublin; several persons whose houses are situated near these openings have objected to them, alleging that dangerous gases and vapours issue out of them. In some instances, illness in houses close to the ventilators has been attributed to exhalations from the latter.

The street sewers of Dublin discharge their contents into a

river, which divides the city into two nearly equal areas. During certain states of the tide, the ends of the sewers are sealed by tidal gates, and the sewage accumulates in the sewers. Under those circumstances, one would expect that the air in the sewers would undergo some degree of compression, to relieve which ventilators opening into the streets would be useful. On the contrary, air descends almost constantly into these openings, even when the tidal gates of the sewers are closed. At a few points only air issues from the ventilators, and these points are close to the open end of the sewer when the tide is out, and when a strong wind blows right into the sewer.

On some occasions air neither enters nor leaves the ventilators; at other times the air enters the sewer through the street ventilators in a rapid current. During the night very little air passes into the ventilators, but about seven o'clock, a.m., the downward current sets in and increases until about eight to nine o'clock, a.m.

The descent of atmospheric air into the street sewers of Dublin through openings intended to permit pent-up air in the sewers to escape into the atmosphere, can be accounted for only in the following way:—

Of the 25,000 houses within the Municipal area of Dublin, by far the larger proportion have connexions with the street sewers. The house drains in some cases directly enter the street sewer without being provided with any kind of traps. These cases are, however, not common. In a large number of the houses in the second and third-rate streets the houses are trapped after a fashion, but the traps are often of faulty construction or out of repair. Again, in most houses the only protection against the entrance of sewer air into the scullery is the bell-trap; that weak barrier against the intrusion of sewer air is frequently taken up by servants, in order that bulky articles may be allowed to pass into the drain—and now and then careless servants forget to put back the trap into its proper place. Owing to these defects in construction, maintenance, and management of house drains, there are numerous direct communications between the interior of houses and the street sewers. The ventilators in the streets prevent the air of the sewers from passing into these houses whenever the temperature of the air in the houses is the same, or is lower than that in the sewer. When, on the contrary, the temperature of the house is higher—which is generally the case—than that of the

sewer, the air from the latter is sucked into the house, to supply the place of the air exhausted in maintaining the combustion of fuel in the fireplaces, and which has been carried up the chimneys by the draught. The difference between the temperature of kitchens and adjacent sewers, in winter especially, is often very great. In February, 1880, the temperature in the scullery of a house was 53 degrees Fahr.; in the kitchen, 10 feet from the fireplace, 60 degrees Fahr.; and in the street sewer close to the house, 45 degrees Fahr. In very cold weather it is likely that there may be differences of from 20 degrees to 30 degrees between the temperature of the street sewer and that of the kitchen. When the air in the kitchen contracts by losing its heat, there is also an insuction of air into it from the adjacent places, one of which may be a sewer.

In March, 1881, we examined a house in Fitzwilliam-square (one of the most fashionable localities in Dublin), in which there were three cases of typhoid fever. Quite close to the house a street-sewer ventilator had recently been opened, to the great alarm and indignation of several of the denizens of the adjacent houses. On walking into the scullery, which was placed beneath the hall-door steps, we directed the attention of the owner of the house to the absence of a trap from the sink. The trap, in a broken state, was found lying in a corner. A lighted candle was placed over the opening in the sink, and the current of air issuing from it was so strong that the flame was extinguished at a distance of three inches from the opening. We immediately examined the ventilator in the street near the house, and found that the external air was steadily descending into it. It was not, therefore, because of pressure in the sewer that the air was forced from it into the house drain; the insuction was caused by the light and warm air of the kitchen rushing up the chimney and producing a partial vacuum. It is the lighting of domestic fires, which commences about seven o'clock, a.m., which accounts for the rush of air about that hour into the street sewers, the air of which has been drawn into the houses in the way described.

The results of these observations do not prove the inutility of street ventilators; though, so far as Dublin is concerned, they do not appear to subserve—except to a trifling extent—the purpose for which they were made. Yet they are serviceable. In the first place, the air which enters through them into the sewer helps to oxidise the sewage matters. Secondly, as the air is sucked into

houses owing to defective trapping, it is better that the current should be largely composed of the air of the street, drawn in through the nearest ventilating opening, rather than be wholly made up of the gases and vapours of the sewer.

These experiments show a melancholy state of things in reference to a large proportion of the house drains of Dublin. The street sewers are well constructed, and will soon run through almost every street and lane in the city; but the private drains are in a deplorably bad condition, except in houses recently constructed or renovated. It might be practicable to detect the defects of house drains by means of delicate anemometers, placed on the ventilating openings of sewers.

ARSENICAL COLOURS.

The dangers to health and life that arise from the use of wall-papers, artificial flowers, bronzes, pigments, and other articles containing arsenic, are such as fairly warrant legislative enactments against the employment of this poison in the industrial arts. We have to record another case which illustrates the impropriety of the use of arsenic for other than medicinal purposes.

On the 25th March, 1880, Dr. Harley asked me to visit a child who had suddenly become very ill, and was supposed to have taken poison. He had severe vomiting, and appeared to be suffering acutely. On closely examining the vomited matter, very small particles of a green substance, brighter than biliary matter, were observed in it. On touching them with solution of ammonia they acquired a deep blue colour, showing the presence of copper, and therefore probably of arsenic. Precipitated ferric hydroxylate ($\text{Fe}_2(\text{HO})_6$) was promptly prepared and administered to the child, as were also ipecacuanha, a little mustard, and abundance of warm water. The washing out of the child's stomach was continued until the disappearance of the green particles from the vomit, which, however, did not take place for more than two hours. In order to dislodge the poison from the bowels a purgative was administered. The egesta was found to contain numerous bright green fragments, and they did not disappear until the end of the second day. The child was feverish, restless, and sleepless for about forty hours, after which he became slowly better, but was not convalescent until about the seventh day. His abdomen was tympanitic, his features were shrunk, and the cerebral symptoms were severe. On three occasions the patient nearly died from collapse. He

became emaciated, and did not resume his previously healthy and robust condition until nearly a month had elapsed.

On the second day of the child's illness, a box of coloured crayons was discovered in a corner of the room in which the child (he was a year old) had been crawling about; and on the floor two small fragments of a green-coloured crayon were found. It was evident that these fragments were portion of a whole crayon, the rest of which had been swallowed by the child. They corresponded exactly in appearance to the green fragments detected in the vomited matter. They were subjected to analysis and found to contain arsenite of copper. The amount of arsenious acid present amounted to the very large percentage of 1.72. The bright colour of the crayon had evidently caught the child's attention, and, as is usual with young children, he put the attractive article into his mouth.

THE CHOLERA EPIDEMIC OF 1873 IN GERMANY.

Professor Hirsch has edited an account of the last epidemic of cholera in Germany, and the work, comprising six volumes, has recently been issued as a "Report from the German Imperial Commission on the Cholera Epidemic in Germany in 1873."

The disease is believed to have been introduced from Russia and Austria by cholera-infected persons, animals, and merchandise—the immediate origin of the outbreak was not ascertained. As a rule, cholera has always appeared in Germany towards the end of July, attained its maximal development and virulence in August and September, and faded out during the winter. The disease was promoted by high temperature, high atmospheric pressure, and long-continued drought. In Munich a heavy rainfall in August apparently caused the epidemic to cease. The favourable influence of rain in abating cholera has often been observed in these countries. Low-lying situations suffered most. In the town of Graudenz, which lies low, the disease caused great loss of life, whilst the fortress of that town, which is situated upon a hill, escaped completely. Heavy clay districts suffered more than those upon the gravels and other light soils. Cholera was most prevalent wherever the soil was damp and contained decomposing organic matter. It extended along the canals, ponds, lakes, and the lines of imperfect drainage. The occupants of river barges suffered much. It was noticed that cholera affected mostly the lowest classes of the population, the dirtiest houses, the places where the sewers were ill-kept, where manure was stored—and, in a word, every place where filth

abounded. Overcrowding intensified the evil. The inmates of public institutions—hospitals, asylums, &c.—suffered more than did the inhabitants of smaller dwellings.

A notable exception to the rule that persons were less affected in private dwellings than in large institutions was that of soldiers. In barracks the proportion of soldiers affected was less than in houses, owing, it is stated, to the greater cleanliness, &c., which was maintained in the former. Intemperate, ill-nourished, weakly, and sickly persons were found least capable of resisting cholera contagion. In a gaol 36·6 per cent. of the prisoners who had scrofula were attacked, whilst only 24·5 per cent. of the healthier prisoners were affected, and with less mortality.

The Commission are of opinion that the virus of cholera adheres to food, and that it is communicable through the medium of potable water. The evidence obtained by the Commission shows that the poison of the disease may be absorbed by the process of respiration. Only one instance of the contraction of cholera by exposure of the person to emanations from the body of a person who had died from the disease is recorded.

One general rule may be laid down in reference to cholera prophylaxis—namely, that it is only by the strictest attention to cleanliness *before* the invasion of the disease that its ravages are likely to be controlled. Once it has established itself in a town, the power of disinfectants to control it is very limited.

A NEW PARASITIC DISEASE.

In June, 1880, an extensive auction of timber and machinery took place at Welbeck, Nottinghamshire, an estate of the Duke of Portland. Several thousand persons attended it, and a large number of these persons procured refreshment at an hotel at Mansfield. Amongst the latter a large proportion became affected with serious symptoms, the most prominent of which was severe diarrhœa. The food supplied at the hotel was at once suspected, and due inquiry having been made, it was found that the affected persons had all partaken of cold boiled hams of American origin. The Local Government Board directed one of their Inspectors, Dr. Ballard, to inquire into the causes of the outbreak. His investigations were of the most careful and minute nature, and the results form the materials of a bulky report issued last March.

Dr. Ballard ascertained more or less completely the particulars of 72 cases of illness which were attributed to the use of the hams

above referred to. A much larger number of cases had, however, occurred, four of which had terminated fatally. The symptoms were varied, but most common amongst them were diarrhoea, nausea, vomiting, headache, and "muscular weakness." In some of the cases there was a considerable amount of fever, the temperature rising to 104° Fahr.

It is not necessary to describe the processes of inquiry and ratiocination which led Dr. Ballard to fix upon the hams as the *corpus delicti* which caused this remarkable epidemic. He succeeded in procuring a portion of a ham which had in part been eaten by some of the affected persons. Having divided it into two parts, he set one aside, and exposed the other during twenty hours to the air in the partially open manhole of the Welbeck sewer. In the same manhole, and during the same space of time, there was also exposed half a cold roast shoulder of mutton. These three articles, together with half a raw ham, from the same consignment of American pork from which the suspected ham had been taken, were forwarded to Dr. Klein for examination. The results of his inquiries were, briefly expressed, as follows:—

No trichinæ were observed in any of the articles.

The three portions of ham contained a species of bacillus not hitherto observed; its threads and sporules were interwoven with the muscular fibre and intermuscular tissue of the ham. This bacillus was cultivated with perfect success in incubators.

Experiments with the infected ham, save the portion which had been in the manhole, and with the cultivated bacilli, made upon dogs, cats, rats, mice, guinea-pigs, and rabbits, with few exceptions, gave positive results. The most common morbid conditions noticed at the *post mortem* examination of the animals were pneumonia and pulmonary hyperæmia. Bacilli were found in the blood of some of the animals experimented with.

The effects produced by the uncooked ham were greater than those caused by the cooked article, whilst there were only negative results in the case of the ham and mutton that had been exposed to the sewer air. Why the infective power of the ham should be destroyed by contact with sewer air is a point not very clear.

A portion of one of the kidneys of a person who had died after partaking of the ham in question, was examined by Dr. Klein; large numbers of bacilli were detected in it. The afferent arterioles and capillaries of the Malpighian corpuscles were literally plugged with masses of the organisms.

Dr. Ballard and Dr. Klein appear to have strong reasons for attributing the Welbeck outbreak to the use of food containing a hitherto undescribed bacillus. It appears that some of the persons who had partaken of the ham, in a portion of which Dr. Klein detected bacilli, felt no ill effects whatever. It may have been that this portion of the ham had been better cooked, as it was the thin or shank end that had been consumed.

BACTERIUM FÆTIDUM.

When excessive sweating of the feet is combined with eczema of their soles, a very disagreeable and characteristic odour is observable. According to Dr. George Thin (Proceedings of the Royal Society, No. 205, 1880), this odour is caused by the presence of swarms of micrococci, which he terms *Bacterium fætidum*. They are found in immense numbers in the stockings and the lining of the shoes of persons affected with this unpleasant complaint. The development of these organisms was observed by cultivating them in vitreous humour placed in an incubator. In the stocking the organism presented the appearance of a minute globe; in the incubator it became first canoe-shaped and then wedge-shaped, having a nucleus and protoplasm contained in a sheath. The bacteria finally assumed the form of large rods, which either divided and formed several rods, or continued as very elongated tubes, filled with protoplasm. In some cases the very long tubes broke up, and the sheath between their segments having given way, ordinary rod-shaped bacteria were poured forth. Numerous brightly refractive points were observed in the long tubes; they often form in chains or rows extending throughout the tube, from which, when it bursts, they escape, as round particles, indistinguishable from the minute globes found in the infected stockings. The development of the bacterium fætidum appears to be identical with the life history of the *Bacillus anthracis*. The fætor continued in the incubating glasses during the development of several generations of the micrococci, becoming fainter with each generation—at the appearance of the eighth of which the odour was still recognisable.

Dr. Thin finds that boracic acid kills the bacteria, and recommends that the stockings should be soaked in a solution of this compound, dried, and then placed upon the feet. Cork inner soles which had been steeped in this acid are recommended to be used by persons whose feet exhale a fætid odour.

THE VIRUS OF CHARBON AND OF FOWL OR CHICKEN CHOLERA.

M. Pasteur, with the assistance of M. Chamberland and M. Roux, has investigated the nature of the *materies morbi* of charbon. The disease is considered by these inquirers to be caused by a species of bacterium. Cultivated in chicken-broth at a temperature between 30° and 40° Centigrade (86° to 104° F.), it develops minute particles (*poussière*), which are veritable germs. When the temperature of the soup is raised to 42° or 43° C. (107·6° or 109·4° F.), no more spores are formed, and the infective power is concentrated in the adult bacteria. Subjected for periods more or less prolonged to the influence of the air, the bacteria are progressively modified by the action of the atmospheric oxygen, losing their virulence gradually and ultimately becoming innocuous. At the end of about thirty-one days the bacterial infusion is incapable of fatally poisoning mice—animals the least capable of resisting the disease. At the end of forty-three days all its virulence disappears completely. The liquid continues to the last to retain bacteria, but in diminished numbers and of smaller size. M. Pasteur terms this process the attenuation of charbon vaccine (*Comptes Rendus de l'Académie des Sciences*, 21 Mars, 1881, p. 666).

M. Pasteur has also recently contributed several papers to the French Academy of Sciences in reference to disease germs, especially those which he believes produce fowl cholera. The latter is a virulent malady, often terminating fatally. A second attack of the disease is unusual. The virus of the disease is a minute organism, which Pasteur has succeeded in cultivating in various infusions, and therefore outside the body of the animal which it infests. He considers that there is considerable analogy between the modes of action of human vaccine and the virus of chicken cholera. The former in general gives a mild attack of disease, which usually prevents or modifies favourably the attack of a kindred but much more serious affection. The virus of chicken cholera may be “attenuated” to such an extent that it is capable of producing only a mild form of the disease when used as a vaccine. Moreover, when an animal has been inoculated with the attenuated virus of chicken cholera, it is found to be capable of resisting the action of the undiluted, or virulent contagious matter.

When the virus is taken from the body of an animal long affected with the disease—say for some weeks or even months—and introduced into the blood of a healthy fowl, the latter invariably

dies. If the blood from the infected animal be placed in chicken-broth the bacteria which it contains and their immediate descendants will continue to be able to infect fatally; but with every successive generation there is a slight decrease in their virulence until finally organisms are developed which induce only a mild attack of the disease, and act as a prophylactic against the influence of the more active bacteria. The time expended in producing mildly infective bacteria from the virulent form of the organism is often several months. The organism is aerobian, and therefore the presence of air is necessary to its perpetuation. A full account of the chicken virus is given in the *Comptes Rendus* for 1880 and 1881.

ACTION OF HEAT UPON TRICHINÆ.

Dr. Vallin,^a Professor of Hygiene at the Val-de-Grâce, Paris, has published in the *Revue d'Hygiène* for the 20th of March, 1881, the results of experiments on meats infected with trichinæ. The eminent Professor has adopted in his researches a new plan of investigation. Finding it difficult to ascertain accurately under the microscope the degree of vitality of those parasites, owing to their incessant movement, he proceeded in the following manner:—

Test tubes, containing 10 c. c. (4 cubic inches) of water and small fragments of trichiniferous meat, and provided with a thermometer, were heated for 20 minutes on a sand bath kept at a constant temperature. Rabbits were then fed with the meat experimented upon. The animals killed after a lapse of fifteen or twenty days and examined microscopically indicated the temperature which proved fatal to the parasites.

The following table shows the results of the experiments:—

Heat in degrees Centigrade.

+ 48	{ 3 rabbits infected.
	{ 1 „ unaffected.
+ 50	A pup, six weeks old, infected.
+ 52	2 rabbits infected.
+ 54	{ 2 rabbits unaffected.
	{ 1 „ infected.
+ 56 to 57	{ 2 rabbits unaffected.
	{ 1 „ infected.
+ 60	{ 2 rabbits
	{ 4 guinea pigs } unaffected.

^a De la résistance des Trichines à la chaleur et de la température centrale des viandes préparées.

These results agree with those obtained by Fridler, Leuckart, Fjord, Krabbé, Davaine, and Colin; but not with those of Perroncito, who found that trichinæ on which he operated were killed by a temperature of 50° C. (122° F.).

These discrepancies are due to the following fact:—The trichinæ which perished when subjected to a temperature of 50° C. were obtained from animals recently contaminated—the embryos were not yet encysted—while those that resisted high temperatures were of very long standing.

There is no positive fact to show that trichinæ have ever, under any circumstances, survived a temperature of 60° C. But it would not be prudent to consider as fatal to the parasite any temperature below this.

The following table shows the minimal temperature of the central part of roasted joints at the time they were removed from the fire:—

	Centigrade.
Roast beef: rather underdone with a few violet parts in the centre	+ 53
	+ 54
	+ 51
Roast beef: well done, bright red colour in the centre	+ 58
	+ 59
	+ 57
	+ 56
	+ 58
	+ 57
Roast mutton: violet in the centre in limited places, but yet eatable	+ 60
	+ 48
	+ 49
	+ 50
Roast mutton: bright red, well done	+ 48
	+ 51
	+ 52
Roast pork	+ 54
	+ 56
	+ 62
	+ 68

In a few cases in which the temperature was found even lower than above, the meat was consumed without any complaint. Fresh meat reaches quickly a high temperature, but not so with salted meat, which requires a longer time. A ham weighing 11 lb.

would require more than three hours boiling to reach 60° C. in the centre. Pieces of salted meat weighing under 12 lb. require four hours boiling, and above that weight, one hour for every 2 lb. is indispensable.

ÆTIOLOGY OF TYPHOID FEVER.

Dr. Robinski has published lately a pamphlet on the ætiology of typhoid fever.^a He draws the attention of hygienists to the influence of stagnant waters in spreading the disease. He had an opportunity of studying this disease in the village of Tylyzt, where very few of the inhabitants escaped the contagion. Dr. Robinski denies that the disease results from the absorption of unwholesome food or drink unless the individual who has made use of them comes in contact, even for a short time, with a patient already affected with the disease. Owing to a protracted drought, no water but stagnant water from a pond was procurable in the village of Tylyzt in the year 1867-68. According to Dr. Robinski, all the people who drank this water, and came in contact with the patients suffering from typhoid fever, became infected, but all those who abstained from this water could, with impunity, expose themselves to the contagion.

Whether, says the author, we consider the infection of typhoid fever as a *contagium vivum* or as a chemical process, it does not alter the facts. We have seen that the contagion attacked only the organism prepared for it, by the absorption of polluted water. Predisposing circumstances, such as imagination, fear, depressed spirits, &c., had nothing to do with the disease in the cases under consideration. Water does not generate the disease, but creates only the conditions (physical or chemical) indispensable for its development.

Those who drank the unwholesome water received into their system substances which gave rise to the conditions (physical or chemical) which rendered active the contagium absorbed at the bedside of the patient; but the water *per se* was unable to produce the disease, and those *only* who, having made use of the water, came into contact with people already affected, contracted the malady.

Dr. Robinski cannot ascertain how the disease originated at first, though he has strong reasons to believe that it was imported,

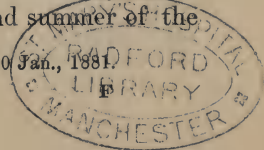
^a De l'influence des eaux malsaines sur le Developpement du Typhus Exanthematique. Paris: Asseliv & Co. 1880.

as he is unable to reconcile the spontaneous generation theory of the disease with his long experience of it.

Another remarkable fact that we gather from Dr. Robinski's interesting account is that the quantity of water absorbed had a great influence on the length of time that the subject remained free from the contagion. The smaller the quantity of water absorbed, the longer was the time which intervened between that absorption and the outbreak of the disease, even in cases where the individual was daily exposed to the infection. It appears as if the obnoxious substances introduced into the system by the water had to reach a maximum either in quantity or concentration to be capable of developing the contagium. These obnoxious matters, according to the author, can remain in the system for years without ever causing any disturbance, till the fatal seed, in the shape of contagium, falls into the hot-bed ready to receive and fructify it.

Dr. Baraduc has published^a some remarks on the spreading of typhoid fever by potable waters. He discusses two epidemics. 1st Case.—The population was supplied with water from a well on a level with the ground, not cemented, and of the rudest description. A little girl came in contact with a typhoid patient, in a distant locality, and brought home the germs of the disease, which declared themselves a fortnight after. The dejections thrown carelessly outside the house could easily find their way into the well. Nearly all the inhabitants of the village became successively affected. All the people who came to the place and who *did not make use* of the water, *did not* contract the disease; but three persons belonging to neighbouring villages, who nursed the patients and lived there for some time, were infected. When these persons went home to be taken care of they did not spread the disease, which shows that the water was the vehiculum of the contagium. 2nd Case.—The second epidemic broke out in 1879, in another locality, and proved more fatal. The most elementary laws as to ventilation of the habitations, &c., were ignored. The village is divided into two parts very distinct, and about 250 yards apart. One is situated on the top of a hill, and thoroughly exposed; the second is on the hill-side, and well protected. The disease made its first appearance in September, 1878, in a house on the top of the hill. The author could not ascertain the origin of the disease. Two patients were attacked, and were not fully cured till the end of January, 1879. Two other cases broke out during the winter and summer of the

^a *Étiologie de la fièvre typhoid.* Revue d'Hygiène. 20 Jan., 1881.



same year. On the 9th of July the disease appeared again—but this time in the lower part of the village—and showed itself very fatal and contagious. From careful inquiries Dr. Baraduc discovered that the linen of the first patients of the month of November, 1878, had been washed in a reservoir on a level, and communicating with the spring which supplied the lower part of the village. All the families have had some of their members struck down with the infection; and only one family, who derived their supply of water from a separate spring, which could not be contaminated, escaped the contagion.

POISONING BY MOULDY BREAD.

M. Mégnin^a has brought before the Hygienic Council a remarkable case of poisoning by mouldy bread. We give here a short *résumé* of his remarks; they add to the facts that have come under our own observation and have been published in this Journal.

The rations of bread had just been distributed to the men belonging to a detachment of the 2nd Hussars, stationed at Oran, Algeria. This bread, which was only forty-eight hours baked, was mouldy and covered with cryptogamic vegetations. The men refused to eat it, and threw it away; some of them gave it to their horses, which hardly tasted it, with the exception of two of them which ate about 1 lb. each. This ingestion, though it was not fatal to the animals, produced violent poisoning, which manifested itself by gastric and cerebral symptoms. The following symptoms were observed:—

1. Gripping in paroxysms at half-hour intervals; the paroxysms lasting from three to four minutes.
2. Great prostration with occasional reaction, accompanied by a full pulse, 60 beats (normal, 40).
3. The animal can hardly stand, and the hind quarters seem paralysed. Presses forward with the head against the wall and the chest on the manger. Cold and profuse perspiration. Laborious breathing. Pulse 80 and small. The animal falls exhausted; coma lasting half an hour.
4. Sudden reaction. The animal gets up as if under the influence of an electric shock and flies at the wall, and then presses the manger. The eyes, though open, do not see; the animal closes them and seems to be asleep standing. Complete insensibility.

^a P. M. Mégnin. Des effets de l'ingestion du pain moisi; chez les animaux et chez l'homme. *Revue d'Hygiène*. 20 Jan., 1881.

5. After a lapse of half an hour the animal falls comatose. Repetition of those symptoms, though less and less violent, till recovery.

Bread produces five kinds of moulds—*Mucor mucedo*, *Penicillium glaucum*, *Aspergillus glaucus*, *Ascophora nigricans*, *Oidium aurantiacum*.

M. Mégnin thinks that of those the *Ascophora nigricans* is the most dangerous. From microscopic examination of a sample of the bread mentioned in the beginning of these remarks he came to the conclusion that the germs had been introduced with the flour, which was deteriorated before it was made into bread.

M. Mégnin has cultivated the *Ascophora nigricans* and the *Oidium aurantiacum* in bread supplied to soldiers and experimented with it on dogs. The *Ascophora nigricans* produced more violent symptoms than the *Oidium aurantiacum*, which nevertheless is very powerful. He therefore feels convinced that the symptoms that manifested themselves in the horses of the 2nd Hussars were chiefly due to those two agents, especially the *Ascophora nigricans*.

RABIES INOCULATION.

Pasteur has succeeded in communicating rabies by means of inoculation. The infective substance consisted of portion of the cortex and of the medulla oblongata, and of the cerebro-spinal fluid of a dog that had died from rabies. By trephining a healthy dog and placing in contact with its brain cerebral matter taken from an animal affected with rabies, the disease is communicated with certainty.

SCIATIC NEURALGIA CURED BY NERVE-STRETCHING.

DR. NORMAN MACKINTOSH, of Gunnison, Colorado, reports in the *American Journal of the Medical Sciences* for April, 1881, a case of sciatic neuralgia of sixteen years' standing, which resisted all ordinary therapeutic agents, and even grain-doses of morphia hypodermically had but a slight effect upon the pain. The paroxysms lasted from five to six weeks, during which time the patient could neither eat nor sleep; the intervals between the attacks became steadily more brief, and the suffering was almost constant. After laying bare the sciatic nerve, and forcibly stretching it, complete relief followed, and at the time of the report, four months after the operation, there had been no return of the pain, although the patient had been working daily on a farm. The wound healed by first intention.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-THIRD ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.

WILLIAM ROE, M.D., Honorary Secretary.

Saturday, May 7, 1881.

The President, DR. BYRNE, in the Chair.

On Inversion of the Uterus. By LOMBE ATTHILL, M.D.; Master of the Rotunda Hospital, Dublin.

ALTHOUGH inversion of the uterus is not of common occurrence, still cases in which this accident has happened are met with sufficiently often to render a consideration of the causes producing it, as well as its symptoms and treatment, of importance, the more so as there is hardly any other affection in which errors of diagnosis are more frequently made. Thus in four out of five cases which have come under my observation the existence of inversion was not at first suspected, and in three of them an attempt was made to remove the tumour, which was supposed to be a polypus, the operation being in each case stopped on account of the pain which the action of the ecraseur caused—a test of the nature of the case which would have been valueless had an anæsthetic been employed. Thus, in the case of M. H., which I shall refer to by and by, the resistance which the patient offered to an examination rendered any attempt to ascertain with accuracy the cause of hæmorrhage from which she suffered impossible, and I was compelled to chloroform her before examining her at all; and as the case had been sent into hospital as one of polypus, I had the ecraseur ready to apply, and had I done so I would have removed the uterus easily and without pain.

Now, as to the causes which produce inversion of the uterus, my own somewhat limited experience leads me to doubt the correctness of the view commonly held that inversion occurs in the very large majority of

cases immediately after delivery. Of the five cases which have come under my observation only two occurred after delivery; in the other three it had no connexion with the process of parturition, but in each case was due to the presence of a fibrous tumour attached to the fundus of the uterus; and a consideration of the facts connected with these cases leads me to doubt if we have as yet arrived at a clear conception of the causes which induce inversion.

In the first instance, it is noteworthy that in all the cases which have come under my observation in which inversion was caused by the presence of a tumour, the tumour was sessile, and also was attached nearly to the centre of the fundus uteri. I have met with several cases in which pedunculated tumours have been expelled from the uterus, and though in some of these the pedicle was very thick and short, in none did inversion follow. Again, we find in those cases in which inversion occurs immediately after the conclusion of the second stage of labour, and in which the placenta remained adherent till after the accident had occurred, that it is invariably attached to the very fundus. Therefore, in all cases of inversion of the uterus, whether induced by the presence of a tumour or occurring as a sequence of labour, the condition is in both the same to this extent, that a body, which to all intents is a foreign body, is attached to that part of the uterus which lies between the openings of the Fallopian tubes.

This analogy between the two classes of cases in which inversion occurs being apparent, there must necessarily be some special causes existing in such cases which predispose in the first instance, and subsequently induce the occurrence of the accident. I entirely set aside from consideration either the weight of the tumour or pulling at the funis, these being quite insufficient to account for the result, though possibly in some exceptional cases they may be factors of minor importance.

Most writers are agreed that when inversion occurs immediately after delivery the weakened condition of the uterine wall at the site of the placental attachment is an important predisposing cause, for though the uterus is at this point generally actually thicker than elsewhere, the muscular structure here is relaxed, and as the uterine sinuses are in that situation unusually large the amount of muscular structure is probably actually relatively less than in other parts of the uterine wall, therefore depression of the placental site, *were the placenta detached*, though improbable, is possible; but that it should occur from this cause while the placenta remains adherent, and thereby gives support to the uterine wall, seems extremely unlikely; and we know, from the numerous cases which have been recorded in which the placenta was found to be adherent after inversion had taken place, that the inversion frequently—and in my opinion probably always—must at least commence before the placenta is separated from its attachment.

In like manner, when a fibroid is developed in the uterine wall, thinning of the muscular structure may possibly occur; but even were this the case, it is quite impossible that the weight of the tumour could alone suffice to cause inversion, for in the two cases in which I enucleated the tumours after inversion had occurred the tumours were of small size, not larger than a hen's egg; thinning of the fundus and any consequent weakness would therefore have little effect, and the weight of the tumour would have been quite insufficient to overcome the resistance which the sides of the uterus would have opposed to its descent. Moreover, that thinning of the fundus occurs is far from being proven; on the contrary, in the case I am about to detail the uterus was throughout of its normal thickness, and the muscular structure in no way impaired. On this point Dr. Reuben Harvey writes that "having made a section of the fundus of the uterus you submitted to me, I examined it carefully, and find the muscular structure fully developed, and perfectly normal." In the case of fibroids, therefore, a further cause is requisite to induce inversion, and that cause is the occurrence of expulsive uterine contractions; and, reasoning from analogy, this is probably so when inversion occurs after delivery.

Now, uterine action may set in when any foreign body is contained in the uterus, but very frequently fibrous tumours and polypi of large size are found in the uterus without exciting it. I have on several occasions dilated the uterus, and subsequently removed a polypus, sometimes of large size, and yet its presence had not excited any expulsive action. In like manner, sessile fibroids springing from the side of the uterine wall are not expelled through the os uteri, unless their capsule has been incised or absorbed. It therefore appears to me that for inversion to occur in consequence of the presence of a fibrous tumour, the tumour must spring from the fundus, or, if it occur immediately after parturition, the placenta must be attached nearly centrally to the same portion of the intra-uterine surface.

The fundus is, without doubt, that portion of the uterus most susceptible of irritation. I am not prepared to say how far irritation, originating there, may be the proximate cause of the uterine contractions which occur at the full term of utero-gestation; but this is certain, that any foreign body brought in contact with the fundus speedily excites the uterus to contract, and is, in general, expelled. This is well known to practical gynaecologists, and when tangle-tents are introduced with the view of effecting dilatation of the uterus, care is always taken to prevent their being pushed in so far as to bring their points in contact with the fundus, for if this be done they are usually expelled before dilatation is accomplished. In like manner, if the introduction of a stem pessary be decided on, the depth of the uterus must be measured to insure that an unduly long stem be not used, or the same result will follow. The

presence, therefore, of a tumour attached to the fundus centrally, or the placenta similarly located, may be fairly presumed to have a like tendency to induce expulsive uterine action, which, failing to detach and expel the tumour or placenta, ends in depression and inversion of the fundus.

It may be objected that if the attachment of the placenta to the fundus were a cause prone to induce inversion, it should be of more frequent occurrence than it is, as a sequence of parturition, but I do not think so. I do not believe the "fundal zone" to be "the most natural position" for the attachment of the placenta, as stated by Dr. Barnes. During an obstetric practice extending over thirty years, and with the opportunities afforded by my connexion with the Rotunda Hospital, I do not remember a single case in which, when I introduced my hand to remove an adherent placenta, I found it attached centrally to the fundus. In many, doubtless, its upper edge reached to the fundus, but the mass of the placenta lay laterally, and as the lower or cervical zone is "a dangerous placental site," from the tendency to the occurrence of hæmorrhage before delivery, so I believe the "fundal zone" to be also an abnormal placental site, and that if the attachment there be "central," that it becomes "dangerous," as tending to the possible occurrence of inversion—(1st) from the weakening of the part which it is of importance should be firm, and (2ndly) from the risk of the placenta, if not rapidly detached, acting as a stimulus and exciting uterine action, which, as in the case of the sessile fibroid, ends in depression, and finally in inversion of the fundus.

It is unnecessary for me to add that I disbelieve in the "dragging of the funis" being a cause of inversion of the uterus. In the two cases which came under my own observation, of inversion occurring immediately after delivery, dragging was not practised. Of course, if my theory be correct, and that the funis be dragged at, the placenta being attached centrally, inversion may be accelerated, but I doubt if it ever be the real cause. "Active spontaneous inversion," the term used by Dr. Duncan, may be fairly applied to cases produced in the manner I have endeavoured to describe, only instead of paralysis of the placental site I consider abnormal activity of the muscular fibres of the part to be the distinctive feature of the case. I entirely disbelieve the theory advanced by Rokitansky, and adopted by Barnes, that paralysis of the placental site occurs in these cases.

The symptoms of inversion of the uterus are seldom marked by any special feature. In the two cases which I have seen, and which occurred immediately after delivery, the accident was not recognised, nor indeed suspected, till some hours had elapsed. Evidently in them the contraction which had inverted the uterus loosened the attachment of the placenta so that it was removed without difficulty from the vagina, and, as far as I could ascertain, without any pulling at the funis; and the

continuance of hæmorrhage, not of an alarming character, was the only symptom which attracted attention. In the three cases in which the inversion was due to the presence of a fibroid, hæmorrhage was the only symptom present. The last case which came under my care is in some points interesting.

CASE.—M. H., unmarried, aged forty-eight, was admitted into the Rotunda Auxiliary Hospital on the 15th of November, 1880. She stated that menstruation had been always painful, and for many years very profuse, the pain being greater and the loss more excessive as she advanced in life; that about two years ago she suffered from paroxysms of pain of a very severe character, after which the hæmorrhage became almost incessant, but from that date the pains never returned. Though, however, now free from suffering she rapidly lost strength, and at last reluctantly sought medical aid and consulted Dr. W. H. O'Meara, of Carlow. With great difficulty he induced her to submit to a vaginal examination, but she resisted so much as to render it most imperfect; but it sufficed to enable him to detect a tumour in the vagina which he naturally supposed to be a polypus.

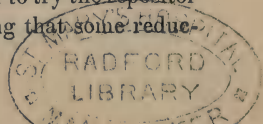
On admission she was very anæmic, and was suffering from the usual effects of long-continued loss of blood. At first she absolutely refused to submit to an examination, but at length permitted herself to be chloroformed, when a large vascular tumour, the thick base of which was surrounded by the os uteri, was found to fill the vagina. Before commencing the examination I had pointed out to the class that if the case proved to be a polypus expelled through the os uteri into the vagina, it was an exception to the usual rule—that when a polypus was extruded from the cavity of the uterus the hæmorrhage became less in quantity, whereas in this case it appeared to have increased, and this fact made me very careful in investigating the case. On attempting to introduce the sound into the uterus alongside the tumour, I found that it passed to a very trifling depth—in fact, there was only a shallow sulcus round the tumour—and a bimanual examination clearly proved that the fundus was absent from its normal position.

The diagnosis was now clear. The case was one of inversion of the uterus induced by the presence of a small fibrous tumour, and I at once proceeded to detach the tumour. Introducing a duckbill speculum and drawing down the tumour with the vulsellum, I was able to bring the greater portion of the mass into view. The whole surface was smooth and highly vascular, and the tumour and uterus were so intimately connected that at first they seemed to form a single body; but on careful examination a depression was detected which evidently marked the point of attachment of the tumour to the fundus of the uterus. At this point I commenced the process of enucleation, breaking down the very firm capsule of the tumour with the handle of a scalpel—thus, by a process

partly of enucleation and partly of avulsion, I detached and removed the tumour. It was about the size of a hen's egg; there was some, but not copious, hæmorrhage during the operation. I now drew the lacerated edges of the wound in the fundus together by means of two or three catgut ligatures, pushed up the inverted fundus into the vagina, and placed in contact with it a pledget of cotton saturated with a weak solution of the perchloride of iron, postponing all attempts to reinvert the uterus till the wound had healed. She recovered rapidly, and the hæmorrhage ceased. Menstruation occurred on the 15th December; it was not by any means profuse, and lasted but five days. On its subsiding I decided to attempt to reinvert the uterus by means of Aveling's repositior, which he kindly sent to me for trial.

This instrument consists of a rod with a double bend, which consequently has a pelvic and perinæal curve, and to which is attached a cup to receive the fundus. It differs from other repositors, inasmuch as it enables the operator to apply force to the fundus uteri directly in a line with the axis of the pelvic inlet. Four elastic rings attached to the end of the stem which project from the vagina, are brought up—two in front and two behind—and attached by tapes to four loops of a belt passed round the waist, and which is kept in its place by braces over the shoulder. These rings keep up a pressure which never exceed two pounds, and is continuous. "With this instrument the fundus of the inverted uterus may be pressed upwards and forwards in a direct line with the axis of the uterus and the pelvic inlet" (*British Medical Journal*, Sept. 4th, 1879). Dr. Aveling's success with this instrument has been considerable, five cases having been cured by it on an average of forty-three hours.

The patient being very nervous, and always resisting even an ordinary vaginal examination, I brought her under the influence of chloroform before attempting to adjust the repositior. This was effected without much difficulty, any that was experienced being due to the extreme narrowness of the vagina, and specially of its orifice; but though the cup was carefully adjusted to the inverted fundus, and retained in position by the fingers till the india-rubber rings were put on the stretch, it was so large that it slipped off the moment the patient altered her position. This invariably occurred, though the cup was readjusted repeatedly, and as the protracted manipulation induced copious hæmorrhage, I finally abandoned the attempt. As the cause of the failure was that the cup was too small to receive the inverted fundus, I thought I might succeed in remedying this by having a strong india-rubber band attached to the upper edge of the cup, but I could not get this done to my satisfaction, and the narrowness of the vagina prevented the use of a larger cup. Consequently, after the lapse of another fortnight I determined again to try the repositior without its having undergone any modification, hoping that some reduc-



tion in the size of the fundus might have taken place, and that it might fit better into the cup, but I was disappointed—a prolonged attempt ended in failure; the fundus could not be retained in the cup for any length of time, the least motion displacing it, and its presence in the vagina induced copious hæmorrhage.

This woman being unmarried, and moreover having reached the mature age of forty-eight, little, if anything, was to be gained by effecting reposition, except preventing the recurrence of uterine hæmorrhage, which had already been checked by the enucleation of the tumour, and which object could be effected with equal safety and with less suffering to the patient by the operation of amputation of the fundus; but before having recourse to this I decided to attempt reposition by means of White's method. Accordingly, after the lapse of a fortnight, during which interval she again menstruated normally, I applied, while she was under the influence of chloroform, White's repositor. This instrument is composed of a stem of wood or vulcanite, twelve inches long, and slightly curved, with a coil of steel wire attached to the outer extremity, whilst the other end is expanded and hollowed, so as to receive the fundus of the uterus in its concavity or disc. The surface of this disc is covered with soft rubber, being an inch and three-eighths in diameter, and about half an inch deep. The disc is introduced into the vagina, and brought into contact with the fundus, and then firmly held in position by the hand in the vagina. The outer end of the instrument, which terminates in the wire coil, is placed against the breast of the operator; the diameter of the circular spring being large, the instrument readily keeps its place on the breast of the operator, leaving his other hand free to be used above the pubes. In the present case, seizing the anterior lip of the uterus with a vulsellum, and making pressure steadily upwards with the repositor, I succeeded in pushing the cervix up for nearly an inch, but the great size of the fundus prevented more than this being accomplished; still I believe I would in time have succeeded in effecting reposition had I been able to pass my hand into the vagina and so compress the fundus, but the extreme narrowness of that canal prevented my doing so.

A great deal of hæmorrhage occurred during this attempt, and finally I desisted—Dr. M'Clintock, Dr. Denham, and Dr. Kidd, who were present, all agreeing with me that it would not be safe to persevere any longer; and I decided that after the lapse of a few days I would remove the inverted fundus by means of the ecraseur. This I did without difficulty on the 10th February. The patient being under the use of chloroform she suffered no pain, nor was there subsequently any rise of temperature or symptoms of peritonitis. After the removal of the fundus I drew together the divided edges of the inverted body of the uterus with catgut ligatures. Subsequently she was daily syringed with tepid water. This

was the sole treatment. In a week she was up and about the ward, and soon after returned home.

In reviewing this case it is, I think, evident that the hæmorrhage was due rather to the existence of the tumour than to the inversion, for the hæmorrhage ceased and menstruation became normal from the date of the enucleation of the tumour. Further treatment might, therefore, seem almost unnecessary; but, although the hæmorrhage had ceased, the patient was not safe from a recurrence of it. The fundus remained of a bright red colour and was very vascular, a mere digital examination sufficing to induce bleeding, which at any moment might have become alarming.

As to the methods employed, my opinion is that Aveling's very ingenious instrument, while likely to suit cases of partial inversion, or cases in which, the inversion having occurred after delivery, the fundus has in time become small, is not so suitable as White's for cases of complete inversion in which the fundus is much enlarged; and, lastly, that amputation of the inverted fundus when it has become chronic is a very safe as well as painless operation, and that the precaution recommended by Dr. McClinton ("Diseases of Women," page 89) of passing a ligature round the neck for twenty-four hours previously is unnecessary, and as it necessarily causes much pain is better omitted.

While thus pointing out the safety of amputating the fundus in cases of chronic inversion of the uterus, it must not be supposed that I advocate that proceeding—on the contrary, it should never be practised except in very exceptional cases. My own experience corroborates the statements of Aveling and White that the reposition of the inverted uterus can be nearly always effected; and I maintain as strongly as they can the advisability of so doing; but there are exceptions to this as well as to all other practice; and the case I have detailed is one of these exceptional cases. The patient was not only unmarried, but she had passed the age at which child-bearing was likely to occur. The protracted efforts which would have been necessary to effect reposition would have been far more likely to be followed by serious consequences than amputation of the fundus; and I believe that though the failure to effect reposition was mortifying, the course I finally adopted was the right one, as being best for the patient. Amputation, then, of the fundus uteri is not in all cases to be looked on as an unjustifiable proceeding, or the operation as an opprobrium to the profession.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

Rupture of the Bladder.—DR. E. H. BENNETT said: But only four cases are recorded in which, after a rupture of the bladder as distinguished from wound, recovery took place. One of these is a case of Professor Syme, in which he made a sufficiently clear diagnosis to justify him in making an incision on the first view of the case. Two of the remaining three recorded cases are suspected to have been intra-peritoneal ruptures. The rupture may be such as either to extravasate the urine into the cavity of the peritoneum, or to extravasate it externally to the peritoneum; and there are fair grounds for inferring that in at least one of the cases that recovered the rupture was intra-peritoneal. Houel, who is the best authority on the subject, and has collected the largest number of cases, has collected 37 cases of rupture of the bladder as distinguished from injuries of that organ by gunshot wounds and stabs; and of these—excluding the cases of recovery I have already mentioned—no individual lived beyond fifteen days. The man of whose case I am now about to speak lived for full five weeks. The difficulty of recognising the rupture and of treating the case, of course, adds interest to the matter, but particularly the great duration of the case, and also the mode of death. The patient was aged twenty-seven years, a sailor, a powerful, strong young man. On the 18th of last May he was admitted into the hospital, having been about an hour previously engaged in a fight outside a public-house. He and his companions were so drunk that it was impossible to learn where he had been struck, or whether he had been struck at all; but some vague idea existed among them that he had been butted in the belly by a man with whom he had been fighting. Another story was that he was kicked between the legs, but there was no wound or bruise whatever. When admitted he was pulseless—or, at all events, his pulse was intermittent and irregular—and he was also cold, pallid, and unconscious. The Resident Pupil had him placed on a bed, and thinking his state of collapse the most urgent symptom, gave him a stimulating drink consisting of a small quantity of sulphuric ether, which immediately induced vomiting. He vomited a great quantity of porter, and immediately rallied. All the symptoms of collapse appeared to have passed off when the stomach was emptied. No external wound or bruise could be discovered, and the patient was too drunk to give anything like a

definite answer to a question. He made an effort to pass water, and first passed a considerable quantity of bloody urine—about two ounces. This condition of affairs alarmed the gentleman who had charge of him, and suspecting a wound of the urinary organs, he sought the advice of the House Surgeon. In half an hour's time the man had emptied his bladder freely. He passed more than a pint of water stained with blood, and this having taken place, no exploration of the urinary organs with an instrument was thought necessary. He fell asleep, and there was no further note of him until I saw him the next morning. He then presented no remarkable phenomena of pulse or temperature, and no remarkable expression of pain, and could pass water freely. The urine was bloody to a slight extent—just smoky. At this time I confess I did not suspect that he had sustained so grave an injury as rupture of the bladder, and as his water was passing freely, and without distress, I thought it better not to introduce an instrument, fearing that it would renew the hæmorrhage. The case went on for three days before it seemed necessary to pass an instrument. On the 24th a tumour was so palpable in the hypogastric region that the first idea (retention of the urine not existing) was that there was a mass of extravasated blood there. He had recently passed water, and there was no reason to suspect that the bladder was distended. I passed an instrument, but only a few drops of water escaped, and without blood. There remained a tumour of considerable size, which extended to within an inch of the umbilicus, and was perfectly firm and hard. On passing my finger into the rectum I found that the tumour projected back, and filled the hollow of the sacrum. At this time I diagnosed an extra-vesical bloody tumour, though that diagnosis afterwards turned out to be wrong. The tumour was so firm and dense that I thought a large extravasation of blood had occurred outside the bladder in the areolar tissue of the pelvis, and that it was best to avoid active interference. His temperature, as the chart shows, was never above 100°, and subsequently ran on for two or three weeks without any elevation whatever above the normal point. His pulse was slow, and for many days there was no febrile disturbance. The last point noted by the Resident is of interest. He complained of tenesmus and constipation of the bowels, and got a starch and opium enema, which relieved him. He continued in this condition for some time, eating his meals very well, and, so far, his state appeared favourable. He was out of bed and about the ward for many days, and his case was a matter of considerable clinical interest. In the second week his urine became fœtid. In consequence of this and the distress the fœtor induced, it became necessary to wash out the bladder, and for some four weeks his bladder was washed out carefully each day. As we washed it out, and after removing any urine, we found, by shifting the instrument, that there was a place to the left of the hypogastric tumour from which we could press

off urine. It was not until that condition occurred that the question of ruptured bladder arose. I submitted that question to my colleagues, but they were unanimous in disagreeing with me that any rupture could have occurred. We found that we could press the urine from a cavity which was not that in which the instrument rested first, and that we could also inject the cavity with a disinfecting solution, which was done from day to day. There was no redness or tenderness over the tumour which could be pressed and handled, nor was there any tenderness behind. About the 13th of June a new symptom occurred. He lay on his back, as if he had an attack of peritonitis, and declared that the pain he suffered was so great that if we did not relieve his bowels he would burst. This was his great complaint, and it was only by the most active purgatives that we could obtain any motion of his bowels. By the use of a long tube on two or three occasions we were able to relieve him, and as soon as the bowel was emptied he lapsed back into his former condition for a couple of days. His bowels refilled, and the case assumed very much the character of one of intestinal obstruction, such as cancer of the rectum, or of the sigmoid flexure, produces. Some six hours after the passage of a long tube on one of the occasions that it was used, he was suddenly attacked with diarrhoea, and from that time his bowels absolutely flowed away. There was no command over them; and after a couple of days of this, he died of asthenia. The mode of death was exactly like that which occurs in cases of obstructed intestine, and it was not through the urinary phenomena that death was reached. On opening the abdomen the first point of interest was the tumour. Cutting through the wall of the abdomen at the hypogastrium, we passed into a great cavity containing a mixture of urine and the fluid contents of the intestine. The whole of the pelvis and the upper limits of the tumour were filled with foetid urine and fluid fæces. The colon passed across the top of the tumour, and was so intimately adherent to it that it was not easy to separate it. Pressing the parts aside, and opening the cavity, this material presented itself [exhibited], and without any further dissection we were able to lift the colon out. Floated in water, it is a most beautiful specimen of a dissection of areolar tissue. The entire of the areolar tissue of the pelvis is here; the entire of the loose areolar tissue in contact with the viscera came away in one piece. Passing down, we found the bladder thrust back into the hollow of the sacrum perfectly collapsed and flat, lying at the bottom of the pelvis, and resting on the rectum. The whole of its areolar covering was gone. The lower third of the rectum was stripped entirely of its covering—in fact, the rectum passed through the cavity which contained the slough, the fæces, and urine. In the anterior aspect of the bladder was this round hole. It is nearly the size of a half-crown or florin, and has a rounded margin, though with some amount of irregularity. I cannot say whether the

original rupture was transverse or vertical; ulceration has destroyed the original margin. The mucous membrane of the bladder is inflamed, but not lacerated or diseased to any extent. The portion of the colon which passed over the tumour is here, and you can see the very point where they come into connexion with each other. The intra-peritoneal aspect is perfectly healthy, for he never had peritonitis. There is a rupture of the colon, but it was secondary. The colon became adherent to the surface of the urine-containing cyst; and towards the termination of the case, during one of the periods of distension, or possibly owing to the passage of the tube, the colon which had thinned away to an extreme degree ruptured into the cavity, and that having occurred, the fatal phenomena, accompanied with diarrhœa, set in. Of all the features in the case, the absence of the phenomena characteristic of rupture of the bladder in the first instance, and the retention of the power of urinating were most remarkable. The man never required a catheter to relieve him of urine, and it was merely used for the purpose of washing out the bladder. The extremely small amount of disturbance affecting the case for many weeks was also remarkable.—*January 22, 1881.*

Canine Dumb Madness.—The REV. DR. HAUGHTON, F.T.C.D., said: This case is in some respects an interesting one. It is a case of death of a fine pointer dog from a disease called dumb madness. The dog was the property of my friend, Mr. Wilfred Haughton, and Dr. Macalister and I made a careful examination of the remains. I have not been able to find anywhere an accurate account of the symptoms of the disease, and I thought that the notes of the symptoms would be of some interest. They were made by Mr. Wilfred Haughton a few days after the animal's death. Dr. Haughton read the notes as follows:—"Pointer dog, four and a half years old. On the 25th of December he was out for a walk and seemed perfectly healthy. On the 26th he was in his kennel all day. On the 27th I observed that his muzzle was soiled as if he had been rooting in earth and had not cleaned himself thoroughly, and there was also a very slight ropy slobber from his mouth. I took no particular notice of the symptoms, as he followed me into town and seemed nearly if not quite as lively as usual. On the 28th the dog was evidently very ill. He had eaten but little from the night before. My practice is to feed my dogs once a day in the evening. When I saw him he was standing half out of his kennel; his mouth was partly open, and ropes of saliva were hanging from it. I opened his mouth and examined the inside. The lips and mucous membrane generally were livid and unhealthy-looking, and also rather dry, and his breath was very heavy. There was no want of intelligence; on the contrary, he seemed to understand that there was something wrong, and

rather appealed to me for assistance. He followed me to my office and thence to Store-street, although unwilling to come the latter part of the way; still he brightened up, and ran over to a couple of dogs we met at the Custom House, and smelled them, as dogs will do, although his mouth remained open all the time. His jaw seemed to drop further open as the day advanced. I saw him again about three o'clock, when he still knew me and came to be petted, but was evidently getting rapidly worse. He lay by the fire, feverish and uncomfortable, but not apparently in any pain, and without whining or whimpering. I brought him to Mr. Lambert, who pronounced the disease to be 'dumb madness,' and said he considered the case a bad one. On Thursday morning, the 30th of December, I received a note from Mr. Lambert saying he did not think the dog could recover, and asking my permission to have him destroyed, which was done forthwith. Up to the morning of the 28th of December the dog's evacuations seemed quite natural. He had always been a healthy dog, and if he ever had distemper it was so mild as not to be distinguishable from a slight cold." The dog was shot in the head. Dr. Macalister, on making the *post mortem* examination, found the lungs, heart, and liver perfectly healthy. The only signs of a diseased condition were found in the duodenum and stomach, but Dr. Macalister concurs with me in thinking that there is nothing so peculiar in them as to justify us in saying that it was the cause of the dog's death. The pyloric end of the stomach is more wrinkled than usual, and when recent was covered with red, glary, ropy fluid. The rest of the stomach is in the condition usual in dogs. At the œsophageal end of the stomach there is a patch about the size of two crown pieces. The duodenum is thickened and the glandular structure largely developed, but Dr. Macalister agrees with me that there is nothing whatever in these conditions to account for such serious symptoms as the dog showed. There are some hardened fæces in the lower part of the rectum, and a few worms, but these are not of the slightest consequence. The brain and top of the spinal cord have been injured by the mode of death, but the lower two-thirds of the cord are perfectly natural and healthy. In the upper part there is some slight congestion, but we are not certain that this was not caused by effusion of blood resulting from the mode of death. The congestion at the œsophageal end of the stomach was so great that, finding nothing to account for death, Dr. Macalister and I came to the conclusion that the dog must have been poisoned. The lungs were perfectly free from congestion, and therefore all idea of strychnine poisoning was out of the question. I cut a piece out of the upper part of the stomach where the congestion was strongest, and had it carefully examined in Dr. Reynolds' laboratory for metallic poison, and the result was that not the slightest reason was found for believing that anything of the kind had taken place. Mr. Wilfred Haughton says

he has no suspicion of poisoning. I do not know anything myself of this disease, but I have heard from kennel-keepers that it is very contagious, and that dogs take it from each other very rapidly. Whether it is only spread by contagion, or whether dogs living on the same kind of food and under the same conditions would get ill of it together, I do not know, but I think the name "dumb madness" a perfectly absurd one. It has no connexion with hydrophobia. The dog's jaw was dropped as if he could not close it, and the powerless condition of the jaw seemed to increase as the dog got worse.—*January 22, 1881.*

Empyema Opening into the Œsophagus.—DR. FOOT laid before the Society a case of empyema of the right side of the chest, discharging itself by the œsophagus. The empyema was one confined to the posterior part of the chest by dense adhesions. The pus had invaded the posterior mediastinum, and, burrowing across in front of the aorta, came in contact with the œsophagus, which lies most to the left of the contents of that region. Two sloughy apertures, close beside one another, existed in the right side of the œsophagus, and are seen both in the specimen and in the coloured drawing [laid on the table] to communicate freely with the pleural cavity; they admit the passage of No. 10 catheters, and are situated just above the place where this tube is in contact with the back of the pericardium. It does not appear that the empyema had evacuated itself to any great extent by this channel, as purulent regurgitation was not observed during life. It might, however, be objected that, from the situation of the apertures, the pus would pass into the stomach and be digested—none, however, was found in that organ after death. As the side had not become deformed or collapsed, and the empyema contained about a quart of pus, it is unlikely the opening had been of long existence, or had materially discharged the contents of the pleura. The empyema was not of large extent; it belonged to the class called circumscribed; it was bounded anteriorly by the condensed lung, posteriorly by the heads and necks of the ribs, internally by the posterior mediastinum, and externally by dense adhesions between the lung and the angles of the ribs. The subject of the case, a man forty-eight years of age, had died, after an illness of about nine weeks, in a state of dyspnœa, cyanosis, and general anasarca; the face was more œdematous than other parts of the body, and anasarca of the eyelids was very noticeable. This was due to compression of the superior vena cava, by the condensed right lung pushed forwards and inwards by pleural abscess behind it. The cause assigned for his illness was a hurt in the right side, received from the edge of a door at which he was struggling to prevent some persons breaking in through. The left lung is voluminous, and over-distended with blood and air; the right side of the heart is filled with a firm coagulum, due to stasis of the pulmonary circulation. The exit of an

empyema by the œsophagus is rare; the mediastinum itself forms a barrier to be got through before the pus can exert its corrosive action on the œsophagus. Two sessions ago he (Dr. Foot) had brought before the Society the case of an empyema which had invaded the vertebral canal. The more usual modes of escape were by an opening on the exposed parts of the chest—"empyema necessitatis"—and through the lungs by way of the bronchial tubes.

DR. J. W. MOORE, in reference to the foregoing case, said: John C., aged forty-eight, married, by occupation a smith's assistant, was admitted to Ward 15 of the Meath Hospital, on December 17, 1880. He was complaining of difficulty of breathing, and a "catchy" pain in the lower part of the right side of the chest. He had been ailing for five weeks before admission to hospital. He attributed his illness to a hurt—a blow on the right side, received while acting as a peacemaker or "go-between" in a quarrel. After some time a cough came on, which was troublesome, and was accompanied with a white frothy "spit." His appetite was bad, the tongue was furred, and he stated that his bowels were irregular, chiefly confined. Before admission his right side had been blistered with considerable benefit. He said the pain had thus been greatly relieved. He was anæmic, of a rather ashen-gray complexion. There was marked œdema about the right eyelids; also slight chemosis of the right conjunctiva was observed. Pulse 88, resp. 28, T. 99·6° on the morning of December 18. The temperature had been 102° the previous evening. Physical examination showed lessened expansion over the right side. The respiration was chiefly abdominal in type. The percussion note was very clear over the left apex. It was of higher pitch over the right apex. The area of hepatic dullness began at the sixth rib in the mammary line above, but dipped fully 1½ inches into the right hypochondrium below the margin of the costal cartilages. There was a great deal of tenderness on pressure in this situation. Posteriorly, dullness extended upwards almost to the spine of the scapula. There was no prominence or even effacement of the intercostal spaces. It was particularly noticed that vocal fremitus was not materially different over the right side from what it was over the left. Having regard to the physical signs and history of the case, a presumptive diagnosis was made of pneumonic consolidation with a moderate right pleural effusion. I carefully then tapped the right chest three times with a hypodermic needle and syringe, but failed to find any fluid. Accordingly, I fell back on the diagnosis of a mediastinal tumour (perhaps sarcomatous), compressing the right lung. In the intense cold of January, collateral œdema of the left lung seemed to occur and to lead to his death.—*January 29, 1881.*

Rupture of the Heart.—DR. CORLEY said: The case I have the honour of laying before the Society is one of interest purely in a pathological

point of view, for the man was brought in dead to the Richmond Hospital. Dr. Lentaigne was commissioned by the coroner to make a *post mortem*, and the result is this specimen [exhibited]. The history of the case, as far as could be obtained from the deceased's relatives, was this:—The man, who was about seventy years of age, had, for some two years preceding his death, been affected by symptoms of a mild form of angina pectoris, irregularity of the heart's action, pain about the chest and left arm, and retching, but he never fainted or lost consciousness in any of those attacks. He was of somewhat intemperate habits. During the recent cold weather he went, on yesterday three weeks, to a friend's house. He had been in rather destitute circumstances, and had not been taking as much food as would be necessary to nourish a man of his age. At the friend's house he was offered a bowl of soup, which he took, and shortly afterwards he stretched himself on a chair and expired. He did not fall off the chair, but a man who went to him found that he was dead. He was brought to the Richmond Hospital, where a *post mortem* examination was made, and disclosed the following conditions:—His kidneys, when taken out, were in a state of extreme congestion, perfectly dark, and full of blood. Some of the cysts, so common in kidneys, were found, and the capsule peeled off readily. The lungs showed a good deal of congestion, and contained a large number of cheesy deposits, some of which were going on to a calcareous condition. The aorta was observed to be rather more stained than usual, and there were a number of atheromatous patches surrounding the orifices and bronchial intercostal vessels. Since the time it was first exposed it has become more stained, which made me think that the stains were *post mortem*. The heart showed signs of fatty accumulation, especially on the left ventricle. There was no diseased condition of the cavity in the ventricle on the right side. On examining the cavity of the left ventricle an extremely well-marked rupture was found in the posterior aspect of that ventricle, commencing about an inch below the base, and travelling down an inch and a half. It, of course, explains the instantaneous death of the patient. The pericardium was full of blood, and there seemed to be some slight infiltration of blood in the neighbourhood of the rupture, which extended downwards for some considerable distance; and there is an appearance as if the force had tended to produce a continuation of the rupture higher up, but as if a band of strong structure had prevented the rupture from extending. It goes pretty straight through the ventricle. Looking at the structure of the heart at the place where the rupture is, the naked eye appearances do not indicate anything like extreme fatty degeneration; it simply looks a flabby, soft heart. Dr. Little took a specimen of the muscular fibres at the rupture, and I await a report from him as to their exact condition. The ventricle lower down shows more evidence of fatty degeneration than at the other parts, and immediately at the left of the

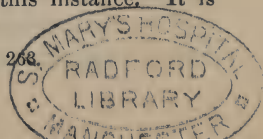
apex there is more, and yet the rupture has gone down towards the posterior aspect, where the fatty degeneration signs are not so marked. The orifices of the coronary arteries do not exhibit a stained or atheromatous condition, or the ossified condition which is recognised by some as causing the symptoms of angina. The aorta itself did present, shortly after it was taken out, some of the signs relied on by the late Sir Dominic Corrigan, as showing that there had been some antecedent endo-arteritis, but I think that the signs of staining were possibly altogether *post mortem*. He had had for two or three days before his death a more frequent recurrence of these attacks of angina than for some time before. My own view of the cause of the rupture was that he had a diseased arterial system, and congested kidneys. These conditions tend to impede the circulation of the blood, and thus a greater force of heart was required. On the day of his death, which was one of the very cold frosty days that occurred, he might have made some unusual exertion in going to the friend's house, and the heart being unable to propel the blood through the system, the ventricle gave way.—*January 29, 1881.*

Rupture of the Right Auricle of the Heart.—DR. DUFFEY also exhibited a specimen of rupture of the heart. A man, aged sixty-five, was found lying "half-smothered" on the floor of a room, his bed on fire, and the room full of smoke. He was immediately taken to Mercer's Hospital. When admitted there he was in a state of profound syncope, and unconscious. The surface of his body was quite pale and cold, the pulse extremely weak, but perceptible, and he had what the nurse described as spasms (? convulsions) of the upper extremities. Shortly after his arrival in the hospital he regained consciousness, and asked for a drink of water. He did not complain of pain. He stated that he had been working by the light of a paraffin lamp, when he got suddenly weak, and accidentally overturned the lamp, which rolled under the bed, and set fire to it. He had previously always enjoyed good health. In a short time he got much better, and saw his daughter. This interview, it is stated, appeared to excite him greatly. Soon after he got out of bed to the commode, and passed water, and I believe had a motion from his bowels. After getting into bed again he became extremely weak, and the symptoms which were so manifest on his admission returned, and he died suddenly. The period of time which elapsed from his first admission into hospital until his death was about an hour. A *post mortem* examination was made by the resident medical officer, Mr. Gaffney, at the instance of the coroner. The heart alone was examined. Mr. Gaffney informed me that on opening the pericardium he found that it contained both fluid and clotted blood. On further examining the heart a large rent was found in the posterior and upper surface of the right auricle. This rent measures three-quarters of an inch, and easily admits

the tip of the little finger. It is in an oblique direction, and the edges are comparatively smoothly cut. Evidently the internal or endocardial area of the aperture is larger than the external. The heart itself is hypertrophied. It has a large amount of fatty deposit in it, and to the naked eye is also apparently in a state of fatty degeneration. [A microscopic examination, made subsequently by Dr. Harvey, showed that there was marked pigmentary as well as fatty degeneration of the heart, and an extreme atheromatous condition of the coronary arteries and of their minute branches.] At a small portion of the left ventricular surface anteriorly, a thickening of the pericardium can be noticed, and immediately below this the ventricular wall has a deeper red colour than elsewhere. There was a small linear depression here, and a localised infiltration of blood to a small extent, and softening of the tissues in the immediate neighbourhood, but no actual rupture of the ventricle. The aorta is atheromatous, and the aortic valves are also atheromatous at their attached edges, and are thickened in patches. The chief point of interest is the time the patient lived after the probable occurrence of the rupture. The case bears out the view expressed by Dr. Walshe, that an aperture of comparatively small size, such as this is, may be filled up by coagulum, and so life prolonged for some hours, as in some cases he has noted. The two conditions of the blood in the pericardial sac, one portion being fluid and the other clotted, point to the probability of there having been two acts of hæmorrhage (Walshe). The situation of the rupture is remarkable. Out of a total of 95 cases of fatty degeneration of the heart, given in Dr. Hayden's tables,^a death resulted from rupture of the heart in 17 cases. In 8 of these 17 cases the seat of the rupture was the anterior wall of the left ventricle, and in 6 its posterior wall. In 1 it was the anterior surface of the right ventricle, and it was through the septum in the other 2. Thus the outer wall of the left ventricle was the seat of the rupture in no less than 14 out of 17 cases, and it occurred through the anterior more frequently than through the posterior wall, in the proportion of 8 to 6. In none of Dr. Hayden's own cases of fatty degeneration of the heart—22 in number—did death occur from rupture of the heart. In Quain's 22 cases referred to by Dr. Hayden, rupture occurred in the anterior wall of the left ventricle in 12 cases, and in its posterior wall in 5; in 2 cases in the right auricle, and in 2 in the right ventricle. All statistics of spontaneous rupture show that in nearly three-fourths of the cases the left ventricle is the seat of the rupture; in 12 per cent. the right ventricle; in 6 per cent. the right auricle; and that in not more than 2 or 3 per cent. is the rupture at the left auricle.^b There can be little doubt that the most common cause of rupture of the heart is fatty degeneration, such as was present in this instance. It is

^a Diseases of the Heart. P. 645.

^b Cf. Ziemssen's Cyclopædia. Vol. VI., p. 268.



also interesting to note the condition of the coronary arteries. We know that atheroma and subsequent embolic obstruction of these vessels are common causes of extravasation of blood into the substance of the heart. Such lesions are admittedly more common causes of rupture than acute or chronic myocarditis, or the formation of new growths in the heart. I venture to suggest that the rupture in this instance occurred when the man upset the lamp, and that the rent was temporarily plugged up by coagulum; and that it was probably when he was straining at stool that the second and fatal rupture took place.

PRESIDENT.—The ruptures on the right side of the heart are usually traumatic, and the result of direct or indirect violence, and in such cases there is frequently no external wound to attract attention. Admiral Villeneuve, it is well known, after his defeat by the English fleet, committed suicide by rupturing his heart with a needle. He inserted it into the right auricle.

DR. HAYDEN.—I am convinced that structural degeneration of the tissue of the heart invariably precedes rupture. The cases before the Society bear out this opinion. I would say that Dr. Corley's case will turn out to be an example of advanced degeneration of the structure of the heart. It is a flabby, soft heart. There is an absence of change of colour, but change of colour is not at all an essential condition of fatty degeneration of the structure of the heart. The man was some seventy years of age; he was also intemperate; and it would seem that he was exposed in the streets during the harsh weather. From that there would result a surface chill and engorgement of the deeper seated veins, and, of course, of the right auricle, with increased tension of the wall of that auricle. Then the draught of hot liquid would have acted as a stimulant to the heart. These are, of course, only speculations, but they might furnish the explanation of the case. I doubt not that when all the chambers of the heart have been examined, evidence will be found of structural degeneration in all. We all know that nutrition is more active on the left side of the heart than on the right, simply in accordance with the principle that increased activity of function determines increase of nutrition; and when retrogressive changes occur in these structures, it will also be found, in most cases at least, that the changes take place on the left side of the heart, and rarely on the right. In Dr. Corley's case there is well-exemplified fatty change in the right. In Dr. Duffey's case one might think that the venous stasis on the right side of the heart was the result of the state of asphyxia in which the man was found. This, of course, also would tend to surcharge the right chamber of the heart. I think that in nearly every case of rupture of the heart the internal strata of the chamber will be found to have been ruptured earlier than the outer; and, as a consequence of that, during the interval between the occurrence of the rupture of the inner strata and of the

outer portion, infiltration of the intervening part takes place. In both of the cases before the Society there is evidence of marginal infiltration of blood; and when Dr. Duffey examines the portion of the interior of the left ventricle corresponding to the small rent in the outer surface, he will find that that is borne out. I understood him to say that in the aperture of the right auricle there was evidence of more extensive destruction of the inner portion than of the outer.—*January 29, 1881.*

Myeloid Sarcoma of the Fibula.—DR. BOYD said: This specimen is a myeloid sarcoma of the fibula, which occurred in a girl twenty years of age. She was of good healthy appearance and constitution. Her leg was amputated by me on the 21st of the present month, in St. Michael's Hospital, Kingstown, and the history of her case somewhat the following:—About seven years ago, while playing with another girl, she got a kick on the external malleolus of the right ankle. Some pain and swelling of the foot and ankle followed, which continued for some weeks. However, with rest most of the swelling disappeared, leaving behind, as she said, a rather small, boggy, little swelling behind the ankle. This occasionally gave her pain in walking, but never to any great extent. About four years after the original injury the symptoms got aggravated, the malleolus becoming red and painful. She came up from Wicklow to Dublin, and went to the Mater Misericordiæ Hospital, where she came under the care of one of the surgeons. He recognised the case to be one of necrosis, and cut down on the malleolus, and removed some of the necrosed bone. She left the hospital apparently well, but a few weeks after her return home she noticed a small tumour making its appearance in the neighbourhood of the cicatrix. This continued to enlarge during the last three years, and within the last six months grew so rapidly as to double its previous size. She experienced very little pain even during the time of the rapid growth of the tumour, and was well able to walk about when I first saw her in St. Michael's Hospital. The only time she complained of pain was when she leant her weight on the foot, or if any sudden jar came on the leg she complained of some pain through it. I got her to bed, and on examining her I found a large tumour occupying the lower third of the fibula, about the size of a small cocoa-nut, and having an indistinct feeling of fluctuation and semi-elastic to the touch. In the neighbourhood of the cicatrix, where the former operation was performed, it felt quite soft, and I thought there was an abscess. I punctured it with a grooved needle, but there was no sign of any pus, and the only thing that came away was some blood, mixed with gelatinous matter. To the feel the tumour evidently had a bony attachment. It could not be moved over the bone, and round the base seemed hard and indurated, the only place where any firmness existed. I saw that I had some form of sarcomatous tumour to deal with, and after explaining the

nature of the growth to the patient, and that it might probably be necessary to remove the leg if I found that excision of the tumour could not be performed, and having obtained her consent, I put her under ether, applied an Esmarch's bandage, and made an incision over the tumour, from the centre of the fibula to the external malleolus. I carried another incision across from the under aspect of the ankle-joint to the posterior aspect of the tumour, and dissected the flaps, laying bare the tumour down to its bony attachments. I hoped there would be no necessity for the removal of the leg, though I might have to remove the portion of the fibula from which it sprung; but on making a deeper dissection towards the tibia, I found that the tumour had some attachment to that bone, and that the same fibro-cartilaginous capsule that covered the tumour was continuous with the periosteum covering the tibia. I therefore saw that there was nothing for me but to perform an amputation, which I did according to the method of Mr. Teele. The operation was perfectly successful. The temperature of the patient went up the day after the operation, and continued so for two or three days, until the dressing was removed. There was very little pus, and she is now doing very well, and the pulse and temperature are both coming down again. I submitted a portion of the tumour to Mr. Abraham for microscopic examination, and I cannot do better than give you his own account of the result. [Read note.] The question is whether the growth was endosteal, and of a bony origin, or whether it sprung from the periosteum. Its character appears to indicate that it must have grown from the bone of the fibula, for where the fibrous or cartilaginous capsule of the tumour comes into contact with the bone, the latter has become of a cartilaginous character, and continuous with the capsule of the tumour. In like manner, where it involved the tibia by its lateral growth, the capsule of the tumour seems continuous with the periosteum and the latter, the compact and cancellous tissue of which seems to be undergoing a change, and to be infiltrated with the myeloid matter.

DR. BENNETT.—Did the necrosis precede the tumour, or was it a mere accident?

DR. BOYD.—The necrosis was the original disease for which the girl was admitted into the Mater Misericordiæ Hospital three years ago, before the growth of the present tumour, and she was apparently quite cured after the operation for the removal of the necrosed bone.—*January 29, 1881.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
May 21, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, 3 -	333,401	848	724	1	1	2	2	8	32	9	28·3
Belfast, -	174,412	638	403	—	3	2	1	18	12	7	30·0
Cork, -	78,642	201	168	—	6	—	2	7	5	5	27·8
Limerick, -	39,353	106	74	—	—	3	—	2	3	2	24·5
Derry, -	25,242	73	60	—	—	—	—	1	—	—	30·9
Waterford, -	23,349	56	65	—	—	1	—	—	2	2	36·2
Galway, -	15,597	33	25	—	—	—	—	—	1	—	20·8
Sligo, -	10,670	26	10	—	—	—	—	—	—	1	12·2

Remarks.

The death-rates contained in the foregoing Table and those which follow are calculated according to the Census of 1871. As regards the Irish towns, it has been ascertained by means of the recent Census that in Dublin, Belfast, and Londonderry the populations are probably understated, and therefore the death-rates are overestimated. There is probably no appreciable change in Cork or Sligo, while in Limerick, Waterford, and Galway the populations are probably overstated, and the death-rates are consequently underestimated. In Waterford, Londonderry, Belfast, Dublin, and Cork the rate of mortality in the four weeks was very high. In Limerick it was high. In Galway and Sligo it was low. In twenty large English towns (including London, in which it was 20·9) the mortality was at the rate of 20·6 per 1,000 of the population annually. In sixteen large town districts of Ireland the death-rate was 27·2 per 1,000; in Glasgow it was 21·4; and in Edinburgh it was 20·7. In the Dublin registration district the omission of the deaths of persons admitted into public institutions from localities outside the district reduces the death-rate from 28·3 to 27·2. Within

the municipal boundary a similar correction gives a death-rate of 27·8. The fatality from zymotic affections remained low in Dublin—the deaths, 79 in number, being only a little over one-half the average of the preceding ten years—namely, 156·1. Fever was the most destructive to life. To it 32 deaths were attributed, including 14 to typhus, 16 to typhoid, and 2 to so-called “simple continued fever.” Whooping-cough caused 8 deaths in Dublin, and was also prevalent and fatal in Belfast and Cork. In these towns, moreover, measles showed an increasing prevalence and severity. Cold weather at the beginning and in the middle of April kept up the mortality from affections of the respiratory organs, and particularly from pneumonia. The total deaths in Dublin from this group of diseases were 147, compared with a ten-years’ average of 134·8 in the corresponding period. They included 92 from bronchitis (average = 95·4) and 41 from pneumonia (average = 23·8). Phthisis caused 118 deaths during the four weeks. On Saturday, May 21, the numbers of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals were the following—smallpox 0, measles 2, scarlet fever 9, typhus 108, typhoid 9, pneumonia 19. The smallpox epidemic in London is assuming serious proportions. The deaths in the four weeks were 330, compared with 289, 202, and 205 in the previous three periods of four weeks respectively.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of May, 1881.*

Mean Height of Barometer,	-	-	-	30·072 inches.
Maximal Height of Barometer (on 10th at 9 a.m.),	-	-	-	30·737 „
Minimal Height of Barometer (on 15th at 5 30 p.m.),	-	-	-	29·093 „
Mean Dry-bulb Temperature,	-	-	-	53·7°.
Mean Wet-bulb Temperature,	-	-	-	49·7°.
Mean Dew-point Temperature,	-	-	-	45·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·308 inch.
Mean Humidity,	-	-	-	75·0 per cent.
Highest Temperature in Shade (on 12th),	-	-	-	66·1°.
Lowest Temperature in Shade (on 11th),	-	-	-	35·1°.
Lowest Temperature on Grass (Radiation) (on 11th),	-	-	-	31·1°.
Mean Amount of Cloud,	-	-	-	42·3 per cent.
Rainfall (on 15 days),	-	-	-	1·532 inches.
General Directions of Wind,	-	-	-	W.S.W., W., E.

Remarks.

A very fine spring month, notable for clear skies and bright sunshine, and a moderate rainfall, which was chiefly in the form of showers and distributed over 15 days. The weather of the first week was in all

respects most favourable—copious showers, bright warm sunshine, and a genial temperature exercising a beneficial influence on vegetation, and quickly effacing the traces of a long and inclement winter. On the 4th there were heavy showers of hail and rain, and at 1 20 p.m. a peal of thunder was heard. Next day an anticyclone began to form over France, whence it moved slowly northwards, gradually developing until on the 10th the isobar of 30·70 inches embraced the greater part of Ireland, Scotland, and the N. of England. In Dublin the barometer read 30·74 inches at 9 a.m. The night of the 10th was very sharp—frost being reported from many inland stations in England, and a hoar-frost being observed in Dublin. The anticyclone now moved along a retrograde path southwards, and a period of unsettled weather succeeded. A deep depression passed eastwards across Ireland on the 15th—rough squalls from S.W. to N.W. and drifting showers of rain prevailing in Dublin. The following days were showery. On the 18th storms of thunder and hail passed over the N.E. of Ireland. On the 20th the barometer rose fast, and the weather became beautifully fine as an anticyclone formed in the S.E. This atmospherical system moved slowly north-eastwards, developing as it travelled. Extremely fine bright weather accompanied it, and light easterly winds were blowing in the British Isles. On the 25th an area of relatively low pressure approached from the S.W., ushering in a period of close cloudy weather, with local thunderstorms, which were particularly severe in England and Wales. In Dublin only refreshing rains fell. The 28th and 29th were cloudy days, but on the afternoon of the latter day the cloud-canopy broke up, and brilliant sunshine prevailed on the last two days of the month. The mean temperature was about $1\cdot5^{\circ}$ above the average in Dublin. Thunder was heard on the 4th and 26th. Hail fell on the 4th and 19th. Solar halos were seen on the 16th and 30th. The atmosphere was foggy on the evening of the 7th.

A NEW METHOD OF PERMANENT INHALATION.

FELDBAUSCH (*Berlin. klin. Woch.*, 1880, No. 47) has devised a method of inhalation which consists in the introduction into the nostrils of small tubes or capsules containing a morsel of flannel, or of blotting paper, moistened with the solution to be inhaled. The author asserts that these contrivances are almost invisible, and do not disfigure the patient. One can readily understand the utility of such a procedure, which in fact furnishes a means of obtaining a permanent inhalation of whatever substance may be desired. Feldbausch has used his method with excellent results in cases of catarrhal bronchitis in which he desired the patient to inhale carbolic acid.—*Gaz. Hebdom.*, 1 Avril.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

RECTAL EXPLORATION AND MANIPULATION IN PELVIC ANEURISM.

MANUAL exploration of the rectum as a means of diagnosis in cases of suspected aneurism of the iliac artery or its branches is advocated by Dr. Henry B. Sands, Professor of Practice of Surgery in College of Physicians and Surgeons, New York, in the *American Journal of the Medical Sciences* for April, 1881. In one case of gluteal aneurism the introduction of the hand into the rectum revealed the fact that the internal iliac participated in the disease. Digital compression with the hand in this position perfectly controlled the pulsation in the tumour, and after ninety minutes the tumour was found to be tolerably firm, and to yield only a feeble pulsation and murmur. In a few days, however, the former condition was restored; this manipulation was repeated three times with the same result. The longest time during which digital compression was maintained was three hours and fifteen minutes, but the result was not different from the former attempts. During a period of three months instrumental pressure was employed about twenty-five times, by means of a horseshoe tourniquet applied over the common iliac artery, but this was likewise ineffectual. The patient refusing ligation left the hospital in about the same condition as when he entered it. This case is instructive as it illustrates in a striking manner the value of manual exploration of the rectum in cases of suspected aneurism in the region of the pelvis, and demonstrates the practicability and safety of maintaining for several consecutive hours pressure on the great arteries by the fingers placed against the rectal wall. Its advantages over the tourniquet are obvious, and notwithstanding failure in this case, success in its employment in the treatment of aneurism by digital compression may be confidently anticipated. The same surgeon also reports a case of aneurism of the external iliac artery in which manual exploration of the rectum afforded information in diagnosis that could not otherwise have been obtained. It threw light on the diagnosis, pointed out the vessels from which the tumour was developed, and demonstrated that the relations of the iliac arteries to the aneurism were such as, even apart from its unusual dimensions, would render futile an attempt to reach these arteries by the ordinary methods of operation. Ligation of the common iliac artery was performed through an incision in the linea alba and peritoneum; it was followed by dry gangrene of the foot and leg, requiring subsequent amputation of the thigh. Although the patient was intemperate and syphilitic and the

abdominal cavity was opened by the operation, complete recovery occurred. Carbolised catgut ligature with antiseptic precautions were employed, and to these the favourable termination is largely attributable. This case suggests the inquiry whether, in any case presenting unusual difficulties in the operation of tying the iliac arteries by the customary method, the one here adopted might not deserve the preference.

THE "HAMMOND PRIZE" OF THE AMERICAN NEUROLOGICAL ASSOCIATION.

THE American Neurological Association offers a prize of five hundred dollars, to be known as the "William A. Hammond Prize," and to be awarded at the meeting in June, 1882, to the author of the best essay on the "Functions of the Thalamus in Man." The conditions under which this prize is to be awarded are as follows:—1. The prize is open to competitors of all nationalities. 2. The essay is to be based upon original observations and experiments on man and the lower animals. 3. The competing essays must be written in the English, French, or German language; if in the last, the manuscript is to be in the Italian handwriting. 4. Essays are to be sent (postage prepaid) to the Secretary of the Prize Committee, Dr. E. C. Seguin, 41, West 20th Street, New York City, on or before February 1, 1882; each essay to be marked by a distinctive device or motto, and accompanied by a sealed envelope bearing the same device or motto, and containing the author's visiting card. 5. The successful essay will be the property of the Association, who will assume the care of its publication. 6. Any intimation tending to reveal the authorship of any of the essays submitted, whether directly or indirectly conveyed to the Committee, or any member thereof, shall exclude the essay from competition. 7. The award of the prize will be announced by the Committee, and will be publicly declared by the President of the Association at the meeting in June, 1882. 8. The amount of the prize will be given to the successful competitor in gold coin of the United States, or, if he prefer it, in the shape of a gold medal bearing a suitable device and inscription.

JABORANDI IN SCARLET FEVER.

In a paper by Dr. J. W. Compton on an Epidemic of Scarlet Fever which prevailed in the city of Evansville, Indiana, from January to November, 1879, the writer, in regard to the treatment pursued, says that he found the greatest unanimity among the profession in the town in the practice of freely oiling the entire surface with some bland oil to allay the itching so constant an accompaniment of the eruptive stage of the disease. There was also much unanimity in the effort to eliminate the poison from the system through the emunctories, the skin and kidneys. For the accomplishment of this purpose various diuretics and diaphoretics were prescribed. One that appeared to have given general satisfaction

to those who gave it a trial was jaborandi. It produced copious diaphoresis with reduction of febrile symptoms, heat of skin and temperature.—*Indiana Med. Reporter*, March, 1881.

COLOBOMA CHORIOIDEÆ (SO CALLED).

DEUTSCHMANN (*Klin. Monatsbl. f. Augenheilk.*, Mar., 1881) describes a case of this condition in a rabbit, upon which he bases the theory that it is due to an inflammatory process on the mesoblastic tissue (the chorioidea) interfering with the normal closure of the cleft in the optic cup. The chorioid sclera and retina in the neighbourhood of the coloboma showed marks of inflammation, both chorioid and sclera being cicatricially contracted, and adherent to each other, and at the borders of the coloboma a fibrinous exudation separated the retina from the chorioid. The chorioid formed the floor of the coloboma, the retina, which was fully developed, ceasing abruptly at its edge, and each free margin of the retina was curiously curled up back on itself. The supposition is that the sclerotico-chorioido-retinitis reopened the newly (and perhaps imperfectly) closed cleft in the optic cup. This theory does not seem applicable to all cases. In *Gräfe's Archives*, Vol. XXIV., Part 2, Pause describes a case where the only defect was an absence of the pigment in the retinal epithelium; and Haab (*loc. cit.*) records two cases, in one of which he found *post mortem* that the lesion was a complete defect of the chorioid, and in the other of which he demonstrated during life the presence of retinal elements in the coloboma by the investigation of the field of vision.

J. B. S.

AFFECTIONS OF THE EARS IN ENTERIC FEVER.

HASSELER (*Ann. des Mal. d'Oreille*, Nov., 1880) has examined the organic and functional alterations of the auditory apparatus occurring in the course of typhoid fever in forty-one cases. He finds that during the first week tinnitus and hardness of hearing are the rule, and during the second and third weeks they are frequent. The prognosis is good if the receptive apparatus is involved, but is very serious if the phenomena do not diminish when convalescence is established. The symptom which ends most favourably is the external otitis; but it rarely occurs alone, being generally accompanied by purulent otitis media. It involves the superficial layers of the canal. The alterations of the middle ear are of two kinds; the first, without suppuration, accompanied by tinnitus, is due to catarrh of the pharynx and consecutive obstruction of the tube; and if the process does not end here, the tympanum becomes the seat of catarrhal inflammation also. The otitis media of typhoid fever has nothing peculiar in its course, the severe pain ceasing with the appearance of the discharge. It is sometimes complicated by an external otitis and a congestion of the labyrinth. Functional alterations of the

internal ear are frequent in the beginning, and may be due to hyperæmia of the labyrinth and serous infiltration, the pernicious effect of the poisoned blood, the depression of the nervous system, &c. *N.Y. Med. Jour.*, April, 1881.

THE PHONIPHERON.

THIS instrument was invented in 1876 by Prof. G. Paladino for investigating the condition of the peripheral terminations of the auditory nerve in cases of severe or total deafness due to affections of the middle or external ears. It is simply a wooden staff (best of maple wood), 45 cm. long, with a small iron disc at one end, which may be held between the deaf person's teeth, or applied to the forehead, occiput, or mastoid process, and a semicircular metal clasp at the other end to be placed on the larynx of the investigator. It is plain that this instrument possesses advantages over the better known dentaphone and audiphone, inasmuch as the sounds are conveyed directly through solid bodies without the intervention of air, and it is well worth further investigation, both as an instrument of diagnosis, and as a means of teaching those children who are not totally deaf the art of speech.—(*Monatsschrift f. Ohrenheilk*, März, 1881.)

J. B. S.

THE NATURE OF THE ACTION OF BELLADONNA ON THE SYSTEM.

THE *modus operandi* of belladonna in its action upon the human system, as stated by Prof. T. Wharton Jones, Professor of Ophthalmic Medicine and Surgery in University College, London, in a communication upon this subject to the *American Journal of the Medical Sciences* for April, 1881, is essentially different from the views generally held, which in the author's opinion are for the most part fundamentally erroneous. Taking the familiar experiment of dropping atropia upon the web of a frog's foot and demonstrating the fact that the venous stasis resulting is due to constriction of the small arteries from contraction of their muscular coat, as is evidenced by the increase in thickness of their walls, which retards the flow of blood, and directly causes congestion, he concludes that the phenomena of belladonna-poisoning stand in this order: 1. Constriction of the small arteries by stimulation of their muscular coat; 2. The establishment of venous congestion in the brain and spinal cord. 3. The cerebral and muscular disturbance arising from the venous congestion in the brain and spinal cord. In considering the mydriatic effect of atropia upon the pupil the elasticity of the iris is a factor which has been generally overlooked, thus with the two sets of muscles, the circular and antagonistic radiating fibres, there is a certain amount of physical elasticity, which requires to be taken into consideration, without a proper estimate of which no correct analysis of the motions of the pupil can be made. Dr. Jones claims that belladonna operates by directly exciting

to action the radiating muscular fibres composing the *dilator pupillæ*, and not by paralysing the sphincter and giving scope to unrestrained action of the dilator. This latter view, which physiologists continue to teach, is controverted by the fact that in paralysis of the motor oculi the pupil is not widely dilated, but is restrained by the elasticity of the iris; it may, however, still be dilated by atropia. When the dilator and sphincter are both inactive, as they are after death, the natural resiliency of the iris keeps the pupil at a medium degree of width. Calabar bean, although it exercises apparently a contrary effect upon the pupil, is not a real antagonist to atropia, for it acts upon the sphincter pupillæ; in an analogous way it relieves congestion by stimulating the muscular coat of the venous radicles, but has no effect upon the arterioles.

NITRO-GLYCERINE.

NITRO-GLYCERINE can be prepared for use in a solution either of alcohol or ether, a one per cent. solution in alcohol being that generally preferred. Nitro-glycerine bids fair to prove an anti-neuralgic of the greatest value, especially in cases of angina pectoris and such other affections as nitrite of amyl has hitherto been much used in, taken at intervals of two to four hours, in doses of about two drops of the one per cent. solution, and increased until full physiological action is obtained. The relaxed condition of the blood-vessels induced lasts usually about half an hour. Doses of the above strength and frequency have been continued through several consecutive days with safety and success in warding off threatening attacks of angina pectoris.—*Louisville Medical News and Therapeutic Gazette*.

VACCINATION AS A PROTECTION AGAINST SMALLPOX.

DR. GEO. M. STERNBERG, Surgeon U.S.A., discusses the explanation of the protection from subsequent attacks, resulting from an attack of certain diseases and of the protective influence of vaccination against smallpox, in a paper in the *American Journal of the Medical Sciences* for April, 1881. The conclusions of Pasteur are first examined, and in place of the current explanation—i.e., that some special pabulum in the system is exhausted by the specific poison—Dr. Sternberg adopts the view that this immunity is to be found in the peculiar properties of living protoplasm which enable it, within certain limits, to adapt itself to varying conditions and injurious influences, and to transmit the impression or modification received in so doing to its off-shoots, which continue to perform its functions during the life of the individual. The illustrations cited by the author appear very apposite, and his theory deserves careful consideration.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Select Clinical Reports.*^a By ARTHUR WYNNE FOOT, M.D., F.K.Q.C.P.; Senior Physician to the Meath Hospital and County Dublin Infirmary.

Subacute Ovaritis; Cirrhosis of the Liver in a Child; Epilepsia Mitior; Eczema of the Hand; Trismus; Croup, Catheterism of the Larynx; Protracted Hæmaturia; Chorea Magna; Gonorrhæal Rheumatism.

THE cases here referred to are some of the many which were under the students' observation in the medical wards in the month of June. They were taken without selection, just as they came, read over in the theatre, explained, discussed, and commented on. The remarks made in connexion with the cases are for the most part a repetition of those made at the bedside. The contents of the record may seem to some a kind of *olla podrida*, but the exigencies of general practice require that the student should become accustomed to attend as carefully to every-day cases as to those exceptionally met with.

Subacute Ovaritis.—A young girl (seventeen), Alice G., applied for advice 28th May, with severe pain in the right iliac fossa, so sharp she "could hardly breathe," and interfering with her standing and walking. She had frequent sickness of stomach, no appetite, moderate fever. This pain had come on suddenly, without assignable reason, on the last day of a catamenial period. There was

^a Being the substance of Clinical Lectures delivered at the Meath Hospital on 9th, 14th, and 21st June, 1881.

great tenderness over the right ovary. She was kept in bed, at rest on her back, with poultices over the seat of pain, and given bromide of potassium ($7\frac{1}{2}$ grs. three times a day). In a week she got up at her own request, but was weak, and unable to continue long out of bed at a time. She was now given some wine, and a mixture with tartarated iron. She went out well on the 6th June. This may have been merely ovarian hyperæsthesia, but it was also suggested to you that it might have been a case of subacute ovaritis, or of local peritonitis arising from the bursting of a Graafian vesicle into the cavity of the peritoneum. Hughes Bennett^a reports a case of peritonitis from this cause; the patient was admitted into hospital on the sixth day, and died on the eleventh day. He adds that he has since seen three other cases of the same kind, all of which recovered. In none of these latter, he remarks, were leeches applied.

Cirrhosis of the Liver.—There is a small boy, aged sixteen, in No. 18 ward, with all the signs and symptoms of cirrhosis of the liver, but whose age, and the regular life he must have led in Artane Industrial School, might seem to invalidate such a diagnosis. His liver is atrophied, with the exception of the left lobe; the spleen forms a large palpable tumour; there is ascites, marked distension of the abdominal veins, and a moderate but persistent jaundice of the skin and urine. He has frequent epistaxis.

Although hepatic cirrhosis *rarely* occurs before the prime of life, it may be found in very young people. F. Weber ("Frerichs' Dis. of Liver," Vol. II., p. 35) has seen it in a *newly-born infant*, as a congenital disease transmitted from the foetal period of life; Hillier ("Trans. Clin. Soc.," Vol. I., p. 110) in a boy, aged *five and a half*; F. Taylor ("Trans. Path. Soc. Lond.," Vol. XXXI., p. 119) in a boy of *seven*; Frerichs (*op. cit.*, p. 34) in a boy *ten years of age*; Wilks (*Med. Times and Gaz.*, 29th Nov., 1862) in a boy of *eleven*; Gordon (*Dub. Quart. Jour.*, Vol. XVII., p. 345) in a lad of *fifteen*; Cheadle (*Brit. Med. Jour.*, 11th Nov., 1871) in a boy, aged *eighteen*. In March, 1873, I had a case of typical cirrhosis here in a boy, aged *seven*. He was tapped, and 81 ozs. of clear greenish serum (sp. gr. 1,006) were removed with apparent relief. Twelve hours afterwards he began to moan, and slipped into a semi-comatose state, in which he died. You will observe that all these cases of cirrhosis in early life (the sex of Weber's infant is not mentioned) were in males. It is to be remembered

^a Principles and Practice of Medicine. 4th Ed., p. 547.

that there is not in every case of cirrhosis a history of spirit-drinking. Frerichs (*op. cit.*, Vol. II., p. 33) says:—"In a large number of cases we are unable to attribute the disease to the abuse of spirits, or to any other irritating articles of diet;" and again, "There are undoubtedly causes of cirrhosis with which we are as yet totally unacquainted." Gordon (*Dubl. Quart. Jour.*, Vol. XVII., p. 347) suggests a very efficient explanation for it in some cases—viz., as a result of local peritonitis, the increase in the hepatic connective tissue being comparable to that observed in the lung as a result of inflammation of the pleura. That there are other causes besides spirit-drinking is certain from the disease having been observed in animals—*e.g.*, the cow, pig, and cat.

The boy confesses to having once taken a drink of spirit and water which "felt very hot in him." As he has been for the past seven years in Artane, he cannot have often repeated the act. The boy observed his belly to swell twelve months ago; the splenic tumour has existed six months, and the icterus for the same length of time. The hepatic dulness ends at the costal margin in the right nipple line; in the median line the inferior margin of the left lobe is $2\frac{1}{2}$ in. below the xiphoid cartilage. The examination of the splenic tumour by percussion in this case is almost superfluous, as much clearer and more definite information is obtainable by palpation. In the left nipple line its dulness reaches to 15 centimetres (6 inches) below the costal margin; and 2 inches above the umbilicus its transverse dulness extends from the median line outwards to the left axillary line. The girth of the abdomen at the umbilicus is at present 64 centimetres (25 inches), and midway between the umbilicus and the xiphoid cartilage 72 centimetres (28 inches).

Epilepsia Mitior.—A young girl, aged seventeen, was admitted 31st May from the Dublin Providence Home, where she had arrived the day before, and had frightened the inmates by taking a "weakness" or "faint," in which she lost her consciousness. Menstruation had appeared on the evening of this day—that before her admission to the hospital. She is an orphan, the youngest of a family of eleven. She says she has been liable to these "faints" for three months, but does not know how many she has had in that time, as she recollects nothing about them. None of her brothers or sisters are similarly affected, but one sister died of St. Vitus' dance. Though not a bad-looking girl, her cranial formation is peculiar; the size of the head small,

notably deficient in the biparietal diameter, and carinated along the sagittal suture; very long in the fronto-occipital direction.

I could not help forming the opinion that these "faints" were epileptic attacks, of the *petit mal* variety, and she was taken into hospital, though, from the many indications of the hysterical temperament she presented, she might have been sent back to the institution with a mixture of valerian and camphor; but in no case is the maxim "*obsta principis*" more important to attend to than in epilepsy in young people before the epileptic habit or *status epilepticus* has become confirmed.

It is quite true that syncopal attacks often closely resemble those of *le petit mal*—that form of epilepsy in which there is "loss of consciousness without evident spasm." The distinction turns upon these points of difference—in epilepsy loss of consciousness is sudden, absolute, and often without any sense of faintness; recovery is rapid, and there is no recollection of the attack.

According to Bright, the most common periods for the first attack of epilepsy are about the age of seven or eight years, and from fourteen to sixteen, shortly before the age of puberty. All observers are agreed that the first accession of the disease takes place more commonly before than after puberty.

The girl was kept in bed till her menstruation (first) was over, and meanwhile was given bromide of potassium, first introduced by Sir Charles Locock,^a who recommended it as being of especial service in those cases of epilepsy in women in which the attacks occurred during the menstrual period.

Eczema of the Hand.—There has been a well-marked instance of a troublesome affection, eczema of the hand, in No. 16 ward, which had prevented the subject of it from earning her bread for nine months, the appearance of her hand being against her obtaining a situation as a servant; besides, it was so swollen, stiff, sore, and itchy that she could do nothing with it. It was confined to one hand, and that the right one. She was a healthy-looking young woman, aged twenty-two, without any evidences of strumous taint, but it is very certain that she suffered from nervous depression in connexion with mental distress, which is the general condition associated with eczema ("Skin Diseases," T. Fox, p. 191). She was a native of Portsmouth, where she had been seduced. She had spent two years in a penitential refuge in Dublin, and was now morally qualified to begin the world again in service, only that she

^a Lancet, 20th May, 1857. Vol. I., p. 528.

was prevented by the state of her hand from doing so. She had been treated unsuccessfully several months before the matron of the institution in which she was brought her here. The disease was confined to the back of the hand and the clefts between the fingers, where were many fissures, the viscid secretion issuing from which formed crusts with a pustular aspect. The pruritus was very severe.

Each finger and the entire hand were wrapped round with strips of old linen soaked in a mixture of lead lotion and glycerine, and the whole then sealed up in gutta-percha paper. As the itching had quite broken her sleep at night, she had, for two or three nights, draughts with potassium bromide 3ss. and chloral 15 grs. in chloroform water, and she was ordered 5 m. of Fowler's solution in tincture of bark three times a day after meals. As there was no reason to starve her, she was given meat and porter every day.

The inflammatory action was soon moderated by the lotion, which was applied fresh every day, and the hand sealed up again after having had a jug of cold water poured over it. It was kept in a sling; the *perfect rest* obtained by slinging the muffled hand, and the exclusion of the air by the careful sealing up of the gutta-percha cover, are points to be attended to. Whenever the hand was let hang or rest in her lap, it got hot, heavy, and swollen, and began to throb. After three days of this treatment the heat, redness, and itching had abated; then a 30-gr. solution of nitrate of silver was carefully painted all over the back of the hand and fingers, from the wrist to the margin of the nails, avoiding the latter, and the sealing up and slinging continued. In a few days she got a strong lotion of iodide of potassium to remove the blackening effects of the nitrate of silver, which it is quickly doing, and the sealing of the hand was discontinued. The arsenic had to be omitted for a few days in consequence of gastric irritation. The note of 8th June (she was admitted 26th May) is—she “has great use of the hand,” and it is white, dry, and quite free from itching.

Trismus.—Among the minor cases lately under your observation has been also an illustration of the impression which may be produced on the nervous system by disease of the permanent teeth. It is that of the young woman, aged eighteen, admitted 30th May, with locked jaw (trismus), and since discharged well and able to open her mouth.

When admitted, the state of her teeth posterior to the canines could not be ascertained, as she could not open her mouth ever so

little; she could not show even the tip of her tongue. She had had a left lower molar extracted a week before, and a few days after the *opposite* side of her face swelled. There was a hard swelling about the angle of the right side of the lower jaw, and she had violent neuralgia over the right side of her head, face, and neck, down to the right acromion. As it was unlikely the extraction of a tooth on the left side had occasioned the state of affairs on the opposite side, it was thought she was cutting a wisdom tooth on the right side, as great disturbance at times attends the eruption of the *dentes sapientiæ*. As she was of a somewhat full and plethoric disposition—a stout lump of a girl—she was put on a nauseating mixture of antimonial wine and sulphate of magnesia, and three leeches, followed by linseed poultices, applied to the right side of her jaw. These measures did not materially lessen either the pain or swelling, and, on 2nd June, an incision was made into the face, about an inch above the angle of the jaw, which gave exit to abundance of matter. Next day the swelling subsided, on the day after the trismus began to relax, and on the 4th June she could put out the tip of her tongue. When able to open her mouth sufficiently it was seen she was not cutting a wisdom tooth, but that the first and second molars at the right side were extensively carious. The trismus in this case was very likely due to direct irritation from contiguity, as the matter was deeply seated and close to where the masseteric nerve enters the muscle on passing through the sigmoid notch, or it may have been due to reflex (or indirect) irritation, as the several branches of the trigeminus appear to be very susceptible of reflex action caused by the dental irritation of one of them. By whichever way produced, the trismus was here directly due to an abscess connected with carious molars, and ceased at once upon its evacuation. There was no mark left on the cheek, as the small cut, made with a tenotomy knife, healed up by primary union and disappeared before the marks of the leech bites. She went out well on 10th June.

It is well to be aware that many and often serious nervous affections may be traced to diseased conditions of the teeth, such as facial, cranial, and general neuralgia, trismus, torticollis, epilepsy, tetanus (from mechanical irritation of the tooth-pulp), paralysis of the arm, amaurosis, deafness, neuralgia of the eyeball, and facial paralysis. You will find a valuable paper on such cases, by Mr. Salter, in Vol. XIII. of “Guy’s Hospital Reports,” 1868.

Croup.—Late in the afternoon of Thursday last (9th June), a

fine little boy, aged three years, was brought to hospital in a very advanced stage of croup. Boys are more subject to croup than girls, and the period for greatest predisposition to it is between the second and seventh years of life. He had been seven days ill, and his mother had lost another child by this disease, so that her neglect of him in delaying about getting advice seemed inexcusable, but might be partly accounted for by her being intoxicated when she brought him to hospital. It was not a time of day at which many of you are about the place, so that few, except the clinical clerks and some who were paying a late visit to their cases, saw the child. When I saw him, at 5 p.m., the stage of carbonic acid poisoning had set in; he was getting drowsy, the eye assuming a sleepy expression, the globes turning upwards and the upper lids falling, even while he was being handled; the skin was cooling ($T. 99.2^{\circ}$); the sensorium getting benumbed, he took no notice of sinapisms, or very hot sponges; the face a leaden colour; the lips pallid. At every inspiration the epigastrium and floating ribs on each side were strongly and deeply depressed. Leeches to the manubrium sterni, hot baths, hot blankets, emetics, steam kettles, sinapisms, hot sponges to the larynx, were diligently employed without removing the dyspnoea or improving his condition. Two of the surgeons promptly attended, but considered any operative proceeding would be unavailing. By 8 p.m. he was quite unconscious, the jaws fixed in a tight spasm, and then a manœuvre was employed, which it is well to be aware of, as it has saved life both in croup and in oedema of the glottis—the passing of catheters into the trachea by the mouth. Although it was too late to save the child, yet the freedom with which he breathed through a No. 10 catheter passed into the larynx, and the ease with which it was introduced, and replaced when it had been removed to clear it, were most encouraging for its adoption in less advanced cases. The jaws had to be kept from closing by pieces of wood put between the molar teeth, or the tube would have been bitten across. There is nothing more than a little dexterity required to slip the catheter into the larynx. He died early in the night.

In the *British Medical Journal* for July 24th and 31st, 1880, are two papers, by Dr. Macewen, on the Value of Tracheal Tubes introduced by the Mouth in Oedema Glottidis, &c. The cases he records are all in adults. In the same journal, for May 21st, 1881, is a case of croup, treated by passing catheters into the trachea by the mouth, by Dr. J. Wilson Paton of Rockferry.

Hæmaturia.—There has been a protracted case of hæmaturia a long time under your observation. I refer to the old man (in No. 15 ward) who has been here since 2nd Feb., and who was passing blood daily in the urine for six weeks before that date. To say that he has hæmaturia is not giving a direct name to his disease; it is but a second-hand name, indicating not the essential disease but one of its features or results. As in the case of hæmatemesis, jaundice, headache, hemiplegia, the prominent symptom is often conveniently named as the disease provisionally, the causal lesion not being ascertainable, except conjecturally, till death or recovery throw more light upon the case. This man's urine has been constantly of the colour of blood every day of this year up to the present. The sediment in it shows numbers of blood corpuscles, the spectroscope showed the characteristic blood bands. His general condition is not materially worse than when admitted (2nd Feb.). He is able to be up and to walk about the ward, and has "neither pain nor ache." He is seventy-two years of age, always enjoyed uninterrupted good health before this symptom appeared, for which he can assign no cause. He has been a total abstainer for the last forty years. His occupation was a sedentary one, that of a confidential office clerk. He is sallow, almost waxen in colour, from loss of blood, and has some œdema of the feet, which has varied very little in amount since his admission. There is an absence of dyspeptic symptoms. From the intimate admixture of the blood and urine it was inferred it came from the kidney; but why it should do so is not at all obvious, there being no history of any injury, nor any indication of calculi thereabouts. Copious and persistent renal hæmorrhages are, perhaps, most common in acute diffuse nephritis, but he had no symptoms of this lesion. There was no probability of active hyperæmia having been produced by irritant substances, such as turpentine or cantharides. A careful local examination was made for cancerous disease—as hæmaturia is one of the distinctive symptoms of primary cancer of the kidneys—but there was a complete absence of abdominal tumour, which is "by far the most constant sign of renal cancer, and usually the earliest one noticed,"^a as well as of any enlargement of the peripheral lymphatic glands. There was a complete absence of vesical symptoms; he never had retention from coagula. When the sediment was examined after Mr. Hilton's^b method, by swimming

^a Roberts. *Urinary and Renal Dis.* P. 518.

^b Guy's Hosp. Rep. 1867. P. 19.

it out in a white basin in clean water, any coagula found were of the smallest dimensions, which makes towards the opinion that the kidney was the source of the hæmorrhage. The case was not one of intermittent or paroxysmal hæmaturia, because it never ceased; nor was it vicarious to some habitual bleeding, as that from piles—he has never had piles.

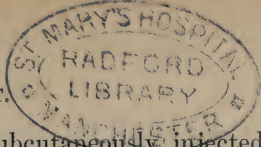
Five years ago we had in the medical wards a man who, with the exception of a period of two months, had had hæmaturia for three years. After his death the cause was discovered to be a villous tumour, or papilloma, seated in the trigonum. This man suffered much from retention and clots in the bladder. He did not die from loss of blood; the papilloma had occluded the orifice of the right ureter, whose vesical orifice was impervious to the finest probe. The ureter, above the obstruction, was distended to the size of the small intestine, the right kidney was expanded with retention cysts, and its secreting structure atrophied. He died with head symptoms, in a comato-delirious condition.

The number of remedies for internal hæmorrhage, which in the case under observation have been used without any apparent effect, even of a temporary kind, would indicate that the cause of this hæmaturia is not amenable to treatment. He has had gallic acid, pyrogallic acid, ergot, acetate of lead, sulphuric acid, matico, catechu, turpentine, ice, perchloride of iron, alum, and iron alum, which latter is recommended as especially useful in bleeding from the kidneys. These medicines have been used separately and in various combinations.

Mr. Thomas J. Dowse, who has had charge of the case and paid special attention to it, has examined the urine no less than ninety times. The sp. gr. varies from 1,014 to 1,020; the quantity, in twenty-four hours, averages 50 oz.; the colour is almost uniformly that of a shade between raspberry vinegar and Burgundy; the sediment consists of blood corpuscles and their *débris*; no tubes or renal elements have been found in it. He is stronger than when admitted, is generally up every day, sleeps and eats well, and the very slight œdema of the uppers of his feet has not increased. I can only conjecture that it may be one of three things—a case of villous tumour (papilloma) of the bladder, a case of cancer of the kidney, or a case of thrombosis of one of the renal veins.

Chorea.—Mary B., aged sixteen years and ten months, was admitted on the 6th June in a state of most violent general chorea.

She had been affected with this complaint in a mild degree for two months, but had been manageable at home till a fortnight before the date of her admission, when she became so much worse that her friends could no longer keep her. While waiting in the hall for admission you noticed the struggling bundle of clothes embraced between two stout women, while above the bundle there appeared to be a black mop being rapidly whirled round, as her long dishevelled hair followed the rotatory movements of her head. She was unable to sit, stand, or walk; could neither speak nor swallow; her expression was partly maniacal, partly idiotic. She screamed loudly as she was being carried up the stairs. She was put in a small ward by herself, and required a special nurse by day and another by night to keep her from falling out of bed, and from pitching all kinds of covering off her. From her mother it was gathered that she had always hitherto been a healthy girl; she had gone safely through the usual infantile diseases (measles, whooping cough, and swine pock), and had cut her teeth without any nervous symptoms. The catamenia appeared two years ago, and had been regular since then. They had occurred just the week before she was brought to hospital. She had always been "hasty in her temper." The only cause for the attack of chorea which was discoverable was vexation and chagrin at a younger sister (aged fifteen and a half) being married before her. This *injuria sprete formæ* seems to have preyed upon her mind. She had had no sleep for the past fortnight; could not take any nourishment, as it was spirted out of her mouth; passed urine and fæces under her; and had the end of her back red and raw from friction against what she had been lying on. The motions of her head, face, trunk, and extremities were as grotesque, varied, and incessant as they ever are in aggravated chorea. The movements ceased during natural and artificial sleep. She made the sucking noises with her mouth, and gave the deep involuntary sighs so usual in this complaint. The evening of her admission she was fully chloroformed, in the hope that natural sleep and the much-needed rest might ensue, but as soon as the effect of the chloroform passed off the muscular movements became as bad as ever, and such tonic spasm of the elevators of the lower jaw set in that it seemed as if her teeth would be splintered they were ground so forcibly together. Next day (7th June) she was put under the influence of chloroform in the morning and the evening, and advantage taken of the lulls to give her nutritive enemata of beef tea and brandy, which were



retained; $\frac{1}{24}$ grain of strychnia was subcutaneously injected on each occasion without any apparent benefit. On the 9th, at 9 a.m., while under the influence of chloroform, a drachm of bromide of potassium and a drachm of chloral dissolved in tepid milk were injected into the rectum, and from this time she began to improve. She slept well from 9 a.m. to 2 p.m. and soon went asleep again, and remained so till 6.30 p.m. The chloroform inhalation and injection of chloral were repeated at 8 p.m., and she slept through the whole night, and from 6 a.m. (of the 10th) to noon. She was again chloroformed, and had a drachm of chloral by the rectum at 7 p.m. on the 10th, and slept all night. On the 11th, at 9 a.m., she was awake, but quiet, and bore the presence of the class without getting worse. She was able, with management, to swallow small quantities of milk, beef tea, and wine. She required no chloroform this day. On the 12th, ordered \mathfrak{z} i. doses of syrup ferri iodidi, well diluted; had a good night, without chloroform, and is swallowing much better; was able to take some tea and biscuits. She began to speak, in monosyllables, on the 13th, for the first time since her admission, and in the low, toneless, whispering voice so common in such cases. On the 16th, eat meat for the first time. Is now quiet both day and night, but would evidently be easily re-excited by any emotional disturbance.

You may have observed this patient was put into a small ward by herself, and that to accommodate her two or three young girls were cleared out of the ward she occupied. This was done lest they should become choreic. There are well authenticated facts to prove that this disease can be propagated by *psychical contagion* to others in the neighbourhood, but a distinct predisposition seems to be necessary for the production of chorea by imitation. It was noticeable that this patient made no noise except while she was being carried up the stairs; much as she kicked and flung her arms about she did not otherwise cause any disturbance in her vicinity. She was quite unable to speak till she was getting better. This arrest of phonation and articulation does not solely depend upon the choreic disturbance of the muscles of articulation, but is due also to chorea of the muscles of the abdomen and glottis. The explosive contractions of the abdominal muscles could be felt by the touch. Choreia of the laryngeal muscles, which usually accompanies the severe form of the disease, is marked by insufficient tension of the vocal cords in phonation, which causes the low, husky, deeply-pitched, and monotonous tone

in which choreics speak in severe cases. Many of you wondered how it was she was not utterly worn out with fatigue during the incessant muscular exertion she went through. The explanation of this absence of local exhaustion is to be sought for in the exceedingly short duration of the individual contractions and the constant change in the seat of the spasm. The pupils are dilated in almost every case of chorea. Observations^a are asked for on the behaviour of the pupils in sleep and during the muscular rest procured by chloral hydrate and chloroform in chorea. These we had several opportunities of making, and found the pupils decidedly contracted. During her first six hours' sleep after the injection of 60 grs. of chloral I went to look at her and was alarmed at her perfect immobility lest she might have been overdosed with chloral, but on raising her eyelids the contracted state of her pupils, indicating profound sleep, removed all uneasiness. The inhalation of chloroform and the sleep produced by chloral arrested the spasms completely, and perfect repose of the muscles ensued, as during natural sleep. At first, after awaking from her chloroform or chloral sleep, the movements were for a short time moderate, but soon reached their former violence, and the scene of tumult began again; but after the third injection of 60 grs. of chloral the movements became subdued to a mere restlessness. It is well to know that there are some cases of chorea in which the movements do not entirely cease in sleep. These cases, according to Cyon, are of reflex origin (chorea reflexoria), and are connected with cardiac lesions in acute rheumatism, disturbances in the female generative system, intestinal worms, &c.

There are numerous precedents and high authority for the treatment of severe chorea with hypnotics and anæsthetics. Von Ziemssen^b says they are of priceless value in extreme cases, where the excessive muscular restlessness and sleeplessness threaten to exhaust the organism. He has a decided preference for chloral, as it almost always acts promptly and surely; by day or night a dose of from 15 to 80 grains is followed by quiet sleep and cessation of the muscular activity. It would have been utterly impossible in this case to have given the chloral by the mouth, especially as large doses of this drug must be considerably diluted, and so form bulky potions; and thus it was the inhalation of chloroform so much facilitated its introduction *per anum*, which otherwise would have

^a By von Ziemssen. Cyclop. Med. Vol. XIV. 437.

^b Cyclop. Med. Vol. XIV., p. 466.

been equally impossible without an injurious and unjustifiable amount of mechanical restraint.

Gonorrhœal Rheumatism.—By a singular coincidence there are just at present two cases of gonorrhœal rheumatism in the medical wards which are worth attending to, because it is a matter of general experience that rheumatism, when developed in connexion with gonorrhœa, is peculiarly apt to become intractable or to lead to injury of the affected joints.

William P., aged twenty-eight, was admitted on 13th June, 1881, with his right knee-joint swollen, stiff, and painful, the pain and swelling most marked along the inner aspect of the articulation, the plantar fascia along the outer edge of the left foot sore and painful. The state of the left foot and right knee prevented him from walking. He has had gonorrhœa since May 30th. A few days after this date he took copaiva balsam, which cured the running; but it returned when the knee-joint was attacked, on the night of June 11th. He had a previous attack of gonorrhœa, which was unattended with rheumatism. The sclerotic coat of the eyes has not been affected. The skin over the affected knee has retained its natural colour. He has had temperatures higher than usual in this form of rheumatism. Upon admission he was put on 10-gr. doses of salicylic acid every second hour, and the right knee was extensively blistered with vesicating collodion. The blister very much reduced the effusion in the knee and relieved the pain. On the 10th he, like the other case, was put on salicylate of quinine, 2 grains three times a day, and the urethra was washed out with a one-grain solution of the same.

William C., aged thirty-three, hairdresser, was admitted on May 31st; a stout full man, fourteen stone weight. On the night of May 22nd he was very much overheated, and had pains next day. At this time he had had gonorrhœa for seven weeks. On Wednesday, May 25th, he was suddenly struck with sciatica in the left side, and had to keep his bed from that time till admitted. When admitted he could not walk or stand, nor was he able to get out of, or turn, or sit up in bed. When he coughed, the "pain ran to his heels." Micturition caused pain, due to the expulsive action of the abdominal muscles on the intra-pelvic portion of the sciatic nerve, not to *ardor urinæ*.

His colon was unloaded by the pills so highly recommended in sciatica by Mr. Handcock—*Olei croc.* 1 m., *pil. hydrarg.* 4 gr., *ext. hyoscyami* 4 gr., *pil. col. co.* 8 gr.; *div. in pil. iv.*; two to be

taken at night. He was put on 5 grains of iodide of potassium thrice a day, and morphia was injected into each side over the sciatic foramina. The iodide of potassium was soon increased to 10 grains thrice a day, combined with tincture of belladonna; and, as the pain continued to be very severe, he was given ext. opii 1 gramme, with ext. belladonnæ $\frac{1}{2}$ gr., every third hour. On May 10th he was fired on both sides along the course of the sciatic nerves, and he felt much relieved as soon as the smarting of the button had subsided. Next morning he was able to "dodge himself half round" in bed; on 13th he was able to sit up in bed for first time, and could move his legs well, and cough without causing "a shoot of pain;" on 14th the pain had nearly quite left his legs, but was severe across the lumbar region of back. He gladly assented to being fired again in that quarter. On the 16th he was put on salicylate of quinine, 2 grs. three times a day, and the urethra was washed out twice a day with a one-grain solution of the same. This man has had two previous attacks of gonorrhœa, and with each attack more or less pain in the joints, but was never laid up until the present occasion. He has on each attack taken copaiva. The sclerotics have never been affected. The joints affected this time were the knees, ankles, and insteps; the right knee was more affected than the left; the pains were worse at night. At present his ailment is more lumbago than anything else, and from the pain and distress he has in coughing and making a deep breath the rheumatism seems to have extended to the diaphragm, and added phrenic rheumatism to his other troubles. You will observe that he no longer complains of the sciatica; he moves his legs freely without pain, though they shake under him when he tries to stand erect; the pains seem to have crept upwards along the fascia of the back.

In 1868, Dr. Alfred Fournier read before the Société Médicale des Hôpitaux de Paris an essay "*De la Sciatique Blennorrhagique.*" Of the four cases which he details at length each had had three attacks of gonorrhœa, and rheumatism with each; the sciatica occurred in the third attack in two cases, in both second and third in two others. He considers the characters of this variety of sciatica to be its sudden—often instantaneous—development; the rapidity with which it culminates and declines in severity; and, thirdly, its relatively short duration as compared with ordinary sciatica.

This man, the stout hairdresser, has had three attacks of

gonorrhœa, each attended with rheumatism, and the last one with sciatica. Sir B. Brodie^a speaks of a gentleman who (at the time the notes were taken) had suffered from as many as nine attacks of this complaint (gonorrhœal rheumatism).

The characters which rheumatism modified by gonorrhœa presents are the following:—There is usually less febrile distress; the articular pain is not so severe nor acute; the integument covering the affected joint is apt to retain its normal colour; there may be but one joint—and there are not generally many—implicated; the inflammation is confined to the synovial membrane; the eye (sclerotic coat), unlike what happens in ordinary acute rheumatic fever, is often attacked. But the most significant of all signs is finding a running from the urethra, which diminishes when the gonorrhœal rheumatism sets in, but which does not cease.

Sir Astley Cooper has given a good account of this affection in his Lectures (Vol. III., p. 97), and says it is not an infrequent disease. Sir B. Brodie also gives several cases of it at length in his work on “Diseases of the Joints” (p. 43, 5th ed.) There are different ways of explaining the occurrence of joint inflammation in connexion with gonorrhœa; some think it merely a coincidence. To this it may well be objected that females seldom suffer from this form of rheumatism. Others hold that it is balsam of copaiva which produces the joint affection. I think the most rational and scientific way of accounting for it is that of Mr. Wilks,^b who believes that gonorrhœal rheumatism is usually a subacute form of a pyæmic inflammation. He considers it analogous to *scarlatinal* rheumatism, which is often nothing less than severe pyæmia, traceable to purulent infection from the sores in the throat, and also comparable to *puerperal* rheumatism, and to the form that sometimes follows smallpox. In support of the pyæmic origin of gonorrhœal rheumatism Wilks refers to two cases in which obscure fatal pyæmia proved to have for its cause a gonorrhœal inflammation of the urethra, the evidence of this being the discovery of purulent inflammation of the prostatic plexus of veins, while the urethra was full of pus.

Senator^c considers the most probable explanation is that the inflammatory irritation is gradually propagated from the urethra to the sacral plexus and the spinal cord, where it affects trophic nerve

^a Diseases of the Joints. 5th Ed. P. 47.

^b Pathol. Anat. P. 70.

^c Von Ziemssen. Cyclop. Med. XVI. P. 73.

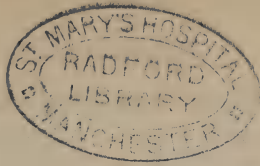
fibres. Gonorrhœal arthritis would thus be assimilated to those articular disorders which occur in diseases of the spinal marrow.

Gonorrhœal rheumatism is commonly situated in one knee-joint. In addition to the peculiarities of gonorrhœal rheumatism before-mentioned it should be noticed that the profuse sweatings of ordinary acute rheumatism are not observed, nor are the serous membranes of the heart likely to be attacked, nor does the articular inflammation show any tendency to shift about capriciously or suddenly disappear.

The rarity of the disease in women may possibly be due to the circumstance that their vaginal and urethral mucous membranes (either of which may be affected by gonorrhœal inflammation) are thicker and more tough than the lining of the male urethra.

A STUDY OF PRIMARY, IMMEDIATE, OR DIRECT HÆMORRHAGE INTO THE VENTRICLES OF THE BRAIN.

DR. E. SANDERS of New York, in an instructive paper upon this subject in the *American Journal of the Medical Sciences* for July, 1881, says—“Strange as it may seem, though important as the subject undoubtedly is, primary intra-ventricular hæmorrhage is either passed by unnoticed, or, if noticed, receives a passing mention only, being characterised as very rare, unimportant, and not to be diagnosed (Nothnagel, Hughlings Jackson, Brichetau, and others).” On the contrary, Dr. Sanders considers primary hæmorrhage into the ventricles as their most common disease, and says:—“Like many other diseases that were formerly classed as very uncommon, but have by later research and observation been found more frequently present by merely being looked for, primary hæmorrhage into the ventricles of the brain when sought for in the *post mortem* room will, I am sure, share a like fate.” Dr. Sanders has collected and studied ninety-four cases of this form of apoplexy, which, as compared with ordinary cerebral hæmorrhage, is remarkably frequent at the two extremes of life. As regards the diagnosis, Dr. Sanders says:—“Given a patient with sudden complete coma, partial or complete paralysis, or even without any paralysis at all, contracture and convulsion, with rapidly following death—in fact, that collection of symptoms which we have come to recognise under the term ‘*apoplexie foudroyante*,’ the probabilities are that we are dealing with a primary intra-ventricular extravasation.” The effusion most frequently occurs in the lateral ventricles. The prognosis is almost always fatal. This important contribution to cerebral pathology contains the clinical histories of twenty-eight cases, with the notes of the autopsies, and several comparative tables, which greatly enhance its value for reference.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Census of Ireland for the Year 1881. Preliminary Report, with Abstract of the Enumerators' Summaries. Presented to both Houses of Parliament by Command of Her Majesty. Dublin: Alex. Thom & Co. 1881. Folio. Pp. 17.

WITH commendable expedition the main facts relating to the Census of Ireland for the year 1881 have been published within three months from the date of the Census, in the form of a Report to His Excellency the Lord Lieutenant. Of course, the 17 pages which make up the Report contain only an abstract of the information obtained by the enumerators on the 3rd of April, 1881; and many months must elapse before we can hope to see the more elaborate and complete Report of the ninth official enumeration of the population of Ireland.

Probably few of our readers have ever seen the ponderous volumes which contain the detailed work of the census of 1871, and it may not be out of place here to refer to the gigantic nature of the work, the first fruits of which we are now considering.

One of the large volumes for 1871 referred to is styled the "General Report," and in it will be found a detailed description of how the work was conducted on that occasion. The work for 1881 will not be less—nay, in some respects it will be absolutely greater.

As some of our readers may have noticed in the Dublin daily newspapers, elaborate arrangements were commenced more than a year before the Census Day of 1881—in fact, in October, 1879; and, according to a statement in the "Preliminary Report" now before us, the plans for carrying out the work had been prepared, and all the preliminaries were completed, when the Commission for digesting and arranging the results of the census was appointed on the 8th of December, 1880. The Commission consisted of the Registrar-General; George Whitely Abraham, Esq., LL.D.,

and the Secretary to the General Register Office, Robert E. Matheson, Esq.

These preliminaries consisted in drawing up all the necessary forms, dividing the whole of Ireland into enumeration districts, and organising an office staff of superintendents, clerks, writers, taskmakers, and servants—making a grand total of about 260. The curious are not allowed now to penetrate the secrets of the Census Office, and we are informed that the Registrar-General does not permit his clerks to pass the cross-doors which separate the General Register Office, where records are accessible to the public on the small payment of one shilling, from that great repository of the secrets of the families of Ireland—secrets which may not be divulged for love or money under the strictest penalties.

Before Census Night, however, the officials had no secrets to tell, and representatives of the press and others interested in social and sanitary science were freely admitted to view the preparations, and information as to the impending work was ungrudgingly given.

Those who remember the Census Office of 1871, with its rude structures, old lofts, damp, dingy, and dirty walls, would scarcely recognise as the same building the neatly arranged and spacious suite of offices which the Board of Works had fitted up for the accommodation of the Census Commissioners. A visit to the office before it was occupied by the staff showed that the arrangements were complete, and everything was in readiness. There are six rooms, five being large and spacious offices, with desk accommodation for 180 clerks, a Board Room for the Commissioners, waiting rooms and messengers' rooms, lavatories, water-closets, &c., all plain and good.

As the necessities of the work require the clerks to be close to one another and to the superintendents of the various sections, it was necessary to pay special attention to ventilation. We, therefore, find air-shafts in all available places, with Tobin's tubes penetrating the walls wherever required. For a temporary purpose, we have seldom seen a better adaptation of old premises.

Probably the most curious department of the office is the strong-room—a series of spacious vaults under the principal part of the office, where we were shown vast piles of sealed parcels containing the records of the census of 1871, with racks ready cleared to receive the forms of 1881 as they flowed in from all corners of

Ireland. These vaults are heated with hot water pipes, and the floors are covered with matting, in order to make those employed in these underground regions as comfortable as possible.

The Report tells us that "all the necessary Forms and Instructions were issued, so that they might be in the hands of the superintendents [of enumeration] before the 14th of March, on which day it was directed that the parcels of forms should be opened, and the distribution commenced." These "necessary forms" weighed, we are informed, no less than 20 tons; they had to be distributed over the 207 enumeration districts into which the whole country was divided. Each of these districts was under the supervision of a Sub-Inspector of the Royal Irish Constabulary, or an officer of the Dublin Metropolitan Police, to whom was assigned the duty of superintending the taking of the census. These superintendents of enumeration comprised 201 officers of the Royal Irish Constabulary, and 2 officers and 4 ex-officers of the Dublin Metropolitan Police. Each superintendent had under his direction a certain number of enumerators, amounting in the total to 4,259—viz., 4,086 constables or sub-constables of the Royal Irish Constabulary, and 173 constables of the Dublin Metropolitan Police.

Arrangements had to be made for redistributing the 207 lots of forms among the 4,259 enumerators. All this had to be done with great rapidity and accuracy, and we learn with pleasure that not one parcel went astray, and that no serious difficulty was encountered in the progress of the work.

Thus the "preliminary arrangements" and "the distribution of the forms," which the Commissioners dispose of in half a dozen lines, must have cost an almost incredible amount of labour, trouble, and minute supervision. This part of the work was entrusted to Mr. James J. Wilson, the chief of the statistical branch of the General Register Office. The efficiency with which Mr. Wilson has discharged his duty fully justifies his selection by the Registrar-General.

Those heads of families who are acquainted only with the "Form A," for a return of the members of the family, &c., with its numerous questions, will be surprised to hear that there are 20 other forms, comprising queries in almost all imaginable social topics, including houses, land, schools, and—what is of more immediate interest to us—public institutions of all kinds, and special inquiries as to the sick, deaf, dumb, and blind. The answers to

all these inquiries will be gradually tabulated, arranged, and made public.

The distribution of the forms was completed on the 2nd of April, and their collection commenced on the 4th of April.

Each enumerator on completing the collection of the forms for his district proceeded to make a summary of the results. From these summaries the Report now before us and its accompanying tables have been compiled.

The present return relates to the more important territorial divisions only and to the principal cities and towns. It differs from the corresponding return presented in 1871 by including all Parliamentary boroughs and all towns having in 1871 a population of 10,000 or upwards, and by giving the statistics of the suburban townships of Dublin separately instead of in combination.

5,159,839 persons (2,522,804 males and 2,637,035 females) were returned in the enumerators' summaries as constituting the population of Ireland on the night of Sunday, the 3rd of last April—thus showing a decrease since 1871 of 252,538 persons, or 4·7 per cent.; the decrease in the number of males was equal to 4·4 per cent., and in the number of females to 4·9 per cent.

There was during the decade a decrease of 60,261 persons, or 4·5 per cent., in the Province of Leinster; 69,575, or 5·0 per cent., in the Province of Munster; 93,686, or 5·1 per cent., in the Province of Ulster; and 29,016, or 3·4 per cent., in the Province of Connaught.

The number of inhabitants in each of the provinces and in all Ireland in 1841, 1851, 1861, 1871, and 1881 respectively, and the decrease between 1871 and 1881, are shown in the following statement:—

Provincial Summary of the last five Decennial Enumerations.

Provinces	Number of Persons in					Increase or Decrease between 1871 and 1881		
	1841	1851	1861	1871	1881	Increase	Decrease	Rate per cent.
Leinster, - -	1,982,169	1,682,320	1,457,635	1,339,451	1,279,190	—	60,261	4·5
Munster, - -	2,404,460	1,865,600	1,513,558	1,393,485	1,323,910	—	69,575	5·0
Ulster, - -	2,389,263	2,013,879	1,914,236	1,833,228	1,739,542	—	93,686	5·1
Connaught, - -	1,420,705	1,012,479	913,135	846,213	817,197	—	29,016	3·4
Total of Ireland, -	8,196,597	6,574,278	5,798,967 ^a	5,412,377	5,159,839	—	252,538	4·7

^a Including 403 persons at sea on Census night of 1861 who were returned upon English shipping forms only.

The decrease of population in Ireland between 1861 and 1871 amounted to 6·7 per cent. as against 4·7 per cent. between 1871 and 1881; in the Province of Leinster the decrease between 1861 and 1871 amounted to 8·1 per cent., between 1871 and 1881 to 4·5 per cent.; in the Province of Munster the decrease between 1861 and 1871 was 7·9 per cent., between 1871 and 1881 it was 5·0 per cent.; in the Province of Ulster the decrease between 1861 and 1871 was 4·2 per cent., between 1871 and 1881 it was 5·1 per cent.; and in Connaught it was 7·3 per cent. between 1861 and 1871, and 3·4 per cent. between 1871 and 1881.

There was an increase between 1871 and 1881 in the population of only three counties—viz., Antrim, which increased 4·7 per cent.; Dublin, 3·2 per cent.; and Kerry, 2·0 per cent. There was a decrease in the population of all the other counties, ranging from 10·8 per cent. in Monaghan, 10·1 per cent. in Tipperary, N.R., and 10·0 per cent. in Carlow; to 3·2 per cent. in Galway, 1·7 per cent. in Cork, W.R., and 0·7 per cent. in Mayo.

According to the summaries furnished by the enumerators, 3,951,888 persons returned themselves as Roman Catholics, this number being 198,979, or 4·8 per cent., under the number so returned in 1871; 635,670 were returned under the head of "Protestant Episcopalians," being a decrease of 32,328, or 4·8 per cent., compared with the number tabulated under that head in 1871; 485,503 were returned as Presbyterians, being a decrease of 12,145, or 2·4 per cent., compared with 1871; the number of Methodists returned on the present occasion amounts to 47,669, being an increase of 4,228, or 9·7 per cent., on the number returned on the Census forms in 1871.

Of the total population in 1881, 76·6 per cent. were returned as Roman Catholics; 12·3 per cent. as Protestant Episcopalians; 9·4 per cent. as Presbyterians; and 0·9 per cent. as Methodists.

The number of families returned in 1881 is 994,579, being a decrease since 1871 of 73,019, or 6·8 per cent. The number of families in 1881 represents an average of 5·19 persons to a family; in 1871 the average was 5·07.

On p. 17 of the Report a Table (VI.) is given showing the number of inhabited houses and the population in 1871 and 1881 in Dublin city and its suburban townships, also the increase in the population therein between 1871 and 1881.

From this table it appears that the population of the city of Dublin increased during the decade by 1·3 per cent.—namely,

from 246,326 to 249,486. The increases in the suburban townships ranged as follows:—Clontarf, 22·3 per cent.; Rathmines and Rathgar, 17·9; Kingstown, 11·3; Blackrock, 11·0; Pembroke, 10·5; and New Kilmainham, 8·7. The total population of the city and its suburban townships increased between 1871 and 1881 by 4·0 per cent.—namely, from 320,735 to 338,579. The township of Drumcondra, Clonliffe, and Glasnevin, having in 1881 a population of 4,865, has been formed since 1871.

Table VII., on p. 17, gives a list of fifteen towns (exclusive of Dublin and its suburban townships) which had in 1871 a population exceeding 10,000. The largest of these towns is Belfast, having in 1871 a population of 174,412, which in 1881 had increased to 207,671, an increment of 19·1 per cent.; the smallest of the towns in this table, according to the population of 1871, is Clonmel, which then had a population of 10,112; in 1881 its inhabitants number 10,519; Queenstown, which in 1871 had 10,334 inhabitants, has now, according to the enumerators' summaries but 9,738—the falling off is probably to be accounted for by a smaller number of ships being in the harbour in 1881 than in 1871.

From a table showing the towns having a population in 1871 of 10,000 or upwards, we learn that the largest percentage (22·3) of increase of population between 1871 and 1881 was in the township of Clontarf, and the next (19·1) in Belfast; the township of Newry increased 10·6 per cent., whereas the Parliamentary borough of Newry only increased by 6·5 per cent.; on the other hand the township of Dundalk only increased 5·5 per cent., whereas the Parliamentary borough increased 8·0 per cent.

The greatest percentage of decrease would appear to have taken place in the Parliamentary borough of Kinsale, but this decrease is attributable to the fact of a fishing fleet having been in Kinsale Harbour on the Census night of 1871, and those on board having been included in the population of Kinsale; the borough of Carlow presents the next highest percentage (10·3) of decrease.

Adding the population of Dublin city and its suburban townships to the population of the provincial towns, which had, in 1871, 10,000 inhabitants or upwards, the number would be 782,066 in 1871 and 829,001 in 1881, being an increase of 46,935, or 6·0 per cent.; in 1871 the number of persons residing outside the area comprised in the above was 4,630,311, and in 1881 the number was 4,330,838, showing a decrease of 299,473, or 6·5 per cent.

The number of births registered in Ireland during the decade

commencing on 1st April, 1871, and ending 31st March, 1881, was 1,392,113, and of deaths 969,110; the natural increase of the population would thus appear to have been 423,003; 622,686 persons, however, having emigrated during the same period, the net result shown by these statistics is a decrease of 199,683, which is 52,855 less than the difference between the population enumerated in 1881 and the number returned in 1871—a disparity to be accounted for mainly by defective registration of deaths in the earlier years, and to some extent by incomplete returns of emigrants.

Such are the main facts which have been made public in the abstract Report on the Census of 1881. The Commissioners state that the detailed part of the work is being rapidly proceeded with, and they trust that at an early date they will be able to submit to His Excellency the Lord Lieutenant the first of the County Tables, which will be followed by others with as little delay as possible.

From a medical and sanitary point of view, several interesting considerations are suggested by a study of the tables contained in the Commissioners' Preliminary Report.

In the first place, certain alterations will have to be made in the death-rates which have of late been calculated on data now proved in some instances to be erroneous. Thus, the death-rate for the whole of Ireland is really higher than it has been represented in the published reports of the Registrar-General, because the published death-rate was calculated upon an estimated population which was higher than the actual population. To take an example, the death-rate in all Ireland for the months of January, February, and March, 1881, was stated in the Quarterly Report of the Registrar-General for those months to be 21·7 per 1,000 of the estimated population. The data on which this death-rate was based were, 28,736 deaths registered in an estimated population of 5,294,436. But the census for 1881 shows the population to have been only 5,159,839, so that the actual death-rate was, not 21·7 per 1,000, but 22·3 per 1,000 of the population annually.

In the same way it can be shown that the death-rates have been made to appear lower than they are in fact in some towns, the populations of which fall short of the estimate. This has been the case to a greater or less extent in such important towns as Cork, Limerick, Waterford, Galway, Drogheda, Kilkenny, &c.

And, on the other hand, in those towns, the populations of which were under-estimated, the published death-rates have been

too high. This is notably the case as regards Belfast, which is proved by the census to be a much more healthy town than was supposed. The returns show that the increase of population in Belfast between 1871 and 1881 was no less than 19·1 per cent.

The case of the metropolis of Ireland naturally excites much interest. So far as the city of Dublin itself is concerned, the death-rates recently published are not materially modified by the census, as the population has increased only 1·3 per cent. since 1871. In the suburbs, however, the published death-rates are proved to be too high, particularly in Clontarf, where the population has increased 22·3 per cent.; in Rathmines, where the increase is 17·9; and in Kingstown and Blackrock, where it is about 11 per cent.

It only remains now to congratulate the Census Commissioners on the success of their labours so far, and the country on the efficiency of the Commission. Nor is it beside the question for us, as medical men, to point out, with reasonable gratification and pride, that the chief organiser of the work is a medical man, and that the "preliminaries" referred to in the Report of the Commissioners as complete, were carried out by the Registrar-General for Ireland, Dr. Thomas Wrigley Grimshaw—not by the Census Commissioners. Further, we cannot but conclude that the fact that the "organisation has worked successfully" is due to the thoroughness and accuracy of the preliminary arrangements, and to the constant supervision of their own clerks by the Registrar-General and his able coadjutor, Mr. Robert E. Matheson, Secretary to the General Register Office.

La Bourboule Actuelle. Par LE DR. AD. NICOLAS, Médecin
Consultant à la Bourboule, &c. Paris: G. Masson. 1881.
Pp. 217.

BOURBOULE, a name derived from an old word "borbola," signifying boiling water—not, as might be reasonably supposed, from the exceptionally muddy (*bourbeux*) nature of the soil which it would seem is characteristic of the place—is a thermal station in the Auvergne, not quite five miles from the better known Mont-Dore. It is situated, at a height of 2,600 feet, in the valley of the Dordogne, a volcanic region of the central plateau of France. The waters which issue from numerous wells (the sources also, we are informed, of bitter quarrels among rival proprietors) are warm and

gaseous. They belong to the strongly alkaline-saline class, but are chiefly remarkable for the large quantity of arsenic (sodium arseniate) they contain. This, it is stated, amounts to about $\frac{1}{10}$ th of a grain in a pint—at least fifteen times as much as that present in the Mont-Dore.^a Lithium has also been discovered in the Bourboule water, and, in some springs, salts of iron. Dr. Nicolas' *brochure* is divided into three parts. The first part, "Le Milieu Thermal," treats of the place itself, its natural history, and limited "distractions;" but gives little or no information as to the accommodation available for invalids and others at Bourboule, or the best way of getting there. Part the second, "Les Eaux," discusses the geological characters of the district, the chemical composition and physical characters of the waters, and their distribution. And the third part, "La Cure," gives the physiological effects of the waters, the diseases in which their use is indicated or has been found beneficial, the contra-indications to their employment, and the various modes in which they are administered. The "lymphatic" diathesis and scrofula have been from the first, and still are, the affections in the treatment of which Bourboule has made its reputation. As both curative and preventive in these cases, it is especially claimed to be *the* thermal station for children. Several distinguished Parisian physicians, such as M. Guéneau de Mussy, Germain Sée, and Gubler, have borne testimony to its efficacy in these and in similar conditions, as well as in rheumatism. All forms of rheumatism, but especially muscular rheumatism, are, it is said, advantageously treated at Bourboule—indeed rheumatic sufferers form one-third of the patients there. Cases of syphilis, cachexia in general, catarrhs, asthma—as at Mont-Dore—functional nervous troubles, and skin diseases, are also among those which have been successfully treated at Bourboule. When this health resort becomes better known, as Dr. Nicolas' modestly

^a According to Dr. Burney Yeo (Practitioner, July, 1881, p. 8), there is only about one-seventieth of a grain of arseniate of soda in a quart of the Mont-Dore water. Mr. Tichborne (Med. Press and Circular, May 25, 1881) gives an analysis of the bottled La Bourboule-Choussy water, and states that there is no doubt that the arsenic exists in the water as arsenious acid, or rather as arsenite of sodium. In his skeleton analysis of half a pint (10 fluid ounces), he makes the amount of arsenic present to be .05 grains. Dr. Nicolas and Mr. Tichborne both mention the fact that M. Thénard was the first chemist to recognise the presence of arsenic in the Bourboule water. According to the first gentleman, M. Thénard found it present in the state of arseniate of soda; but according to Mr. Tichborne, it was as arsenious acid, or as neutral arsenite of soda. Fortunately, "the relative therapeutic merit of arsenious acid (As_2O_3) and arsenic acid (As_2O_5) is still a moot question."

written book will doubtless make it, physicians will not be slow to avail themselves of it, in suitable cases, as a means of employing so powerful a therapeutical agent as arsenic in a form which may possibly be tolerated better, or be more efficacious, than its pharmacopœial preparations occasionally are.

The Science and Practice of Medicine. By WILLIAM AITKEN, M.D. (Edin.); F.R.S.; Professor of Pathology in the Army Medical School, &c. 7th Edition. In two Volumes. Pp. 1,150 and 1,180. London: C. Griffin & Co. 1880.

THE task of a reviewer in expressing an opinion on the merits or demerits of a work which in a short period of time has passed through several large editions, all of which have been favourably received, is almost a needless one. And this would seem to be especially the case in reference to such a treatise as a new edition of Dr. Aitken's widely-known "*Science and Practice of Medicine*," which at the time of its first appearance in 1857 was at once recognised as a standard authority and as a work which would confer a distinguished reputation on its author, as it undoubtedly and deservedly has done. As it is nearly nine years, however, since the sixth edition issued from the press, it may not be amiss to say that a careful, although we regret somewhat delayed, inspection of the present edition, convinces us that it fully carries out the original object of the work in incorporating and connecting the more recently established facts which illustrate the nature of diseases and their treatment. To accomplish this object at the present day in the complete way in which Dr. Aitken has done, considering the extensive range of subjects embraced, represents an enormous amount of unceasing and methodical labour. For it must be remembered that this work is not alone an original treatise of high merit, in which the views and great experience of the author on many important subjects are advanced, but that it is chiefly remarkable for its being a masterly condensed selection of the leading and best determined facts representing the present aspect of the science and practice of medicine. To this may be added the statement that there is no other work on the subject in the English language in which the importance of the study of pathology as a guide for the rational practice of medicine is more firmly insisted on or better taught.

Viewing the medical literature of the last decade, more, perhaps,

has been written on the subject of nervous diseases than on any other special class of disease. But the very nature of this all-important subject has caused the results of the numerous investigations and studies which have been made regarding it to be published, for the most part, in monographs and special journals not ordinarily seen by the majority of practitioners. Many of these gentlemen, we know, are anxious to keep *au courant* with the medical science of the day, and to these the complete and instructive analysis Dr. Aitken gives of the writings of those who have paid special attention recently to the study of diseases of the brain and nervous system and their treatment will be most acceptable. This part of the work—which includes a chapter on Insanity—has been entirely rewritten, as indeed to a great extent has been the major portion of both volumes.

Of course, in such a treatise, some readers will take note of omissions in reference to subjects upon which possibly they may be particularly well-informed, and others will take exception to certain statements with which they may not be able to agree. This is natural, but does not in our opinion detract from the merit of a work which in scope, and in general solid and reliable information for the practitioner, in his dealing with diseases in all parts of the world, has no equal.

On Ankylosis and the Treatment for the Removal of Deformity and the Restoration of Mobility in various Joints. By BERNARD E. BRODHURST, F.R.C.S.; Foreign Associate of the Academy of Sciences of Rome, &c. 4th Edition. London: J. & A. Churchill. 1881. 8vo. Pp. 100.

WE do not recollect to have seen the previous editions of this work, so we are unable to express an opinion on its merits as compared with them. We have read the book before us without learning any new fact. The chapter on Pathology is meagre in the extreme, and often incorrect. One hardly expects in the present day, and in a fourth edition, to find the following passage:—"In old age, for example, atrophy of the articular cartilages always takes place; it advances gradually, until the whole cartilage may be entirely removed." Had the author prosecuted his study of Dr. Redfern's papers, which he quotes in the very page in which this statement is made, he would have seen how completely this error, which Mr. Toynbee is responsible for, has been corrected.

Dr. Redfern states, and all practical anatomists agree in his statement, "that articular cartilages do not become gradually thinner as life advances, and that they are not uniformly thinner in aged persons than in early life." In reading the subsequent chapters we are struck by the remarkable fact that the author has so scanty a stock of illustration that he is forced to quote *in extenso* the details of the same case of gonorrhœal rheumatism twice over, with such a change in the text as suggests that there has been a clumsy attempt to conceal the identity of the descriptions. In the first account the following amusing introduction of the case occurs:—"In 1848, when he was twenty-five years of age, he had intercourse of a doubtful character, which was followed in seven days by urethral discharge." We are at a loss to know what was "doubtful" in this occurrence; the facts are admitted, and there is no room for doubt either as to their occurrence, or as to the nature of their result, or as to the character of the parties. In the second account this is rendered plainly—"When he was twenty-five years of age he contracted a gonorrhœal discharge." These overt faults in the book render us but little inclined to search for its merits, although, no doubt, the author gives good advice as to the treatment of stiff joints; but this subject is so familiar to practical surgeons we need not delay to further notice this book.

A Practical Treatise on Tumours of the Mammary Gland, embracing their Histology, Pathology, Diagnosis, and Treatment. By SAMUEL W. GROSS, A.M., M.D.; Surgeon to, and Lecturer on Clinical Surgery in, the Jefferson Medical College Hospital and the Philadelphia Hospital, &c. London: H. K. Lewis, 136, Gower-street. 1880. Pp. 246.

DR. GROSS writes with the object of furnishing a systematic and strictly accurate treatise on Tumours of the Mammary Gland which shall be entirely in harmony with the results of modern histology. In that object, by no means an easy one to accomplish, he has succeeded remarkably, and has furnished the profession with a clear and concise text-book, rich alike in sound pathology and good practical surgery.

In this work the all-important subject is the treatment of cancer of the breast; and here a ray of hope appears to which we must

particularly turn our attention. The author, in his preface, indicates this point of special interest:—

“Not the least important part of the work is that in which the view is sought to be maintained by an abundant array of facts, that carcinoma may be permanently relieved by thorough operations practised in the early stage of its evolution. I am aware that this doctrine will not meet with general acceptance on the part of those purely mechanical surgeons who believe that freedom from recurrence denotes an innocent neoplasm. In every case of final recovery mentioned in this treatise, the diagnosis was based upon minute examinations conducted by trustworthy microscopists, whose reports have been utilised in this inquiry to the exclusion of the descriptions of the early writers on carcinoma.”

The observations of the author on the use of the terms carcinoma and sarcoma, malignant and benign tumour, &c., are most important, for to the vagueness with which these various terms are used are due many of the errors that are constantly arising in the treatment of these diseases, particularly the procrastination in adopting active surgical treatment:—

“The genetic classification of neoplasms has not met with general acceptance on the part of writers on and teachers of surgery, and many complain of the gradual abandonment of the division into benign and malignant, and find special fault with the term sarcoma, under which they say pathologists group tumours which possess the greatest possible diversity of clinical history. Carcinoma, however, is open to the same objection; and many purely practical surgeons, in teaching that their benign growths are synonymous with adenocenes, the connective tissue, or the non-carcinomatous neoplasms, and that the malignant ones are equivalent to the carcinomatous tumours of the histologist, hold a position which is no longer tenable. With the view of including a certain class of the non-carcinomatous group, which some clinicians recognise as being partly malignant, they have coined a new expression, and describe sarcoma as a semi-malignant or recurrent growth; but this clinical classification is even worse than the other, since sarcoma, as may be seen in the chapter on that affection, is more infectious than ordinary scirrhus, and only yields in point of malignancy to medullary carcinoma. It may be said, however, that the nearer the structure of a mammary tumour approaches that of the physiological adult tissues, whether these be connective or epithelial, the more innocent is the growth, and that the more it departs from the normal standard, or the more atypical it is, the more malignant is the new formation. If the clinician wishes to retain his classification, he should base it upon the fact, disclosed by modern histological investigations, that tumours which originate from

the connective tissue have their innocent, semi-malignant, and malignant representatives, while those which are derived from epithelial elements include semi-malignant and malignant formations. Thus, in the former series fibroma, lipoma, and chondroma are absolutely benign; myxoma is semi-malignant, because it exhibits a marked tendency to reproduce itself after removal; and sarcoma, as I have just pointed out, is excessively malignant. Of the epithelial series, the malignant nature of carcinoma is familiar to everyone, while adenoma is eminently a recurrent growth."

We have quoted thus at length from the author, for his remarks, although specially applicable to tumours of the breast, may be accepted as a very clear and exact interpretation of modern opinion on the subject of tumours generally.

The relative frequency of carcinomatous tumours of the breast in comparison with non-carcinomatous is estimated by the author to 83·20 per cent. to 16·79 per cent.—an estimate almost identical with that of Bryant, with whom the numbers are 83·16 and 16·83. Of the non-carcinomatous group more than one-half the cases are examples of sarcoma, exhibiting, as the passage above quoted notices, a marked, in many cases an extreme, degree of malignancy.

Dr. Gross advocates the early and complete removal of all mammary tumours as the only efficient treatment. We only wish that his advice were more readily and speedily followed than it is, for certainly patients, and too often members of our profession, are prone to adopt any measures rather than recommend an early operation. So the hope of eradicating the disease is commonly lost by the time the advice of operating surgeons is sought. That this hope is not absolutely a vain one, even in malignant diseases of the breast, is proved by the statistics of early and complete removals as compared with cases left to their natural course. Dr. Gross sums up his chapter on this subject with these conclusions:—

"That when left to itself carcinoma inevitably kills, by its baneful consequences as a local disease, or by its remote multiplication.

"That about one in six, or 16·77 per cent. of the patients die of the operation itself; but that the risk is not so great as to forbid interference, since it adds twelve months to the life of the patient.

"That thorough operations definitely cure 9·05 per cent. of all patients, or more than half as many as it destroys.

"That the patient is safe from reproduction if three years elapsed since the operation; and that, finally, recurrence may be delayed for several months, or be prevented altogether, by clearing out the axilla at the same time that the entire breast is removed."

From these conclusions, which are founded on the most exact basis of observation in which the nature of the disease has in all cases been fully investigated, we can with a greater confidence urge operation, particularly on tumours not yet of advanced growth, as affording a reasonable hope of success, although the hope is still but small.

We cannot close this notice without heartily recommending Dr. Gross' book as a thoroughly practical guide both in the diagnosis and treatment of mammary tumours.

Aids to Rational Therapeutics. By J. MILNER FOTHERGILL, M.D.
London: Baillière, Tindall, & Cox. 1881. Pp. 121.

THIS little book is one of the Student's Aid Series, previous issues of which, as a class, we have felt obliged to condemn. The present work, however, is one of quite a different stamp from its predecessors. Instead of being, like them, "specially designed," apparently as a mere cram only, "for students preparing for examination," Dr. Fothergill has put together in it—and in that happy form which characterise all his writings—many but too often ignored important points, without a practical knowledge of which no one can aspire to become a successful practitioner. While most other works of this series might be legitimately defined as aids to pass examinations on superficial knowledge, Dr. Fothergill's is rather an aid to the young medical man when he has entered practice. And the information derived from the study of this little book will not only be of the greatest use to the student in the hospital wards, and in passing his examination, but will also stand him in good service in after-life.

It is much to be regretted that instruction in rational therapeutics is too often neglected in our hospitals. We fear that in many instances the charge that students at present are taught too exclusively to look at disease from a dead-house point of view, is but too true. The ignorance and irrationalness of the majority of students when questioned on the treatment of certain diseases, or of such variously caused symptoms as headache, cough, palpitation, &c., is known to all who have examined in the subject. Few students can construct a simple prescription, and there are fewer still who could indicate the difference in treatment between a pyretic condition with a "dry" skin, and one with a "wet" skin; or in a given case choose between a nerve depressant and a vascular

one, or between a stimulant and a vascular diuretic. To teach this, and much more in the same line, is the object of this work. In its general idea it is, to a great extent, an abridgment of the author's well-known "*Practitioner's Handbook of Treatment*," which we had the pleasure of reviewing in this *Journal* some four years ago. We recognise several familiar prescriptions from its pages, and note the same stress laid on the importance of attention to minor matters of detail, and on the indication of correct principles as a guide to practice, which form so valuable a feature of the larger work. We may particularly notice the excellent pages on *Female Troubles*—especially the graphic description of a case of *ovaritis*—on *Children's Diseases*, and on the *Use of Aperients*. Dr. Fothergill, by the way, approves of Cockle's pills—"Very good pills, Cockle's!" he says. So we suppose that we shall soon see his name, in connexion with Colonel Burnaby's, advertised in praise of these aids to civilisation.

The following extract will probably give as good idea of the work as anything we could say of it. He is speaking of piles or anal fissures associated with constipation, and having referred to the local treatment, prescribes an "alkaline saline purgative," which he directs to be taken "with an equal quantity of boiling water, so as to make it as warm as the patient can comfortably drink it, immediately after getting out of bed in the morning. To give laxatives warm in the morning early, lessens the griping, and makes the bowels move more quickly, thus obviating that annoying matter, the action of the bowels during the day, so socially inconvenient. Now there is one thing I should like you to know about as regards piles. There exists a belief that aloes produce piles; don't run your head against it, though the evidence for it is insufficient. Did you ever hear of or think about 'reflex constipation?' Nevertheless it is coming to the front. When the vermicular action of the bowels causes pain it is inhibited, or arrested reflexly. Thus a swollen tender ovary, an irritable bladder, or a displaced or enlarged uterus, are all disturbed by the action of the bowels; pain is produced in the act of defæcation, and so the action of the bowels is reflexly held back. The consequence of this is that a fæcal load accumulates there, and then the evil is aggravated, the mass constantly pressing on the tender spot and producing persisting pain, while the strenuous action of the gut to pass the obstruction sets up from time to time acute agony. Here the bowels must be opened, and kept open, if necessary giving the opiate before they move, to

lessen the suffering. By keeping a wary eye on the cause of reflex constipation, the student will often be successful where others have failed, and relieve the patient and so earn *κυδος*."

There are two great omissions in the book—viz., a table of contents and an index; and we have noticed a few typographical errors in the prescriptions. In all other respects it is an excellent book, which all students, and many practitioners, would do well to study.

Lectures upon Diseases of the Rectum and the Surgery of the Lower Bowel. Delivered at the Bellevue Hospital Medical College. By W. H. VAN BUREN, M.D., LL.D. (Yalen); Professor of the Principles and Practice of Surgery in the Bellevue Hospital Medical College, &c. London: H. K. Lewis, 136, Gower-street. 1881. Pp. 412.

ONE would almost think that before the present day everything that could be written on the subject of the Lectures before us had been written, but that it is not so will be evident to any surgeon who will read them. Professor Van Buren furnishes us with a text-book well worthy of his reputation as an accomplished teacher of the principles and practice of surgery. The old and well-known principles he states in a clear and most readable style, while the progress of modern surgery in the treatment of diseases of the lower bowel finds in him a most able exponent.

The leading principle of this branch of surgery, which he inculcates as essential, is the necessity of an exact and correct diagnosis. To establish this essential an accurate examination of the bowel is necessary, but all admit that the ordinary aids in this examination are most defective, no speculum yet invented giving a satisfactory field of vision. The least defective, as is now very generally admitted, is a Sims' duck-bill of moderate size. This speculum Professor Van Buren considers the least faulty, but, while availing himself of it, he asserts that for a full examination only the forcible dilatation of the sphincter under the use of a general anæsthetic is sufficient. He insists on the free use of general anæsthesia for this purpose, and for the purpose of avoiding, in the case of females, the repugnance to a free exposure of the parts.

An exact knowledge of the forms of disease met with in that region, and of their pathology, is the remaining principle which our

author insists on as the true guide to successful practice. To follow him through the series of diseases is beyond the scope of this review; we can quote only a few examples. For the removal of internal hæmorrhoids, the following operation, hardly varying from that of Sir A. Cooper, except in the method of exposure of the tumours, is practised by the author:—

“I then commence the operation by thorough dilatation of the sphincter ani muscle, by which the interior of the lower part of the rectum is placed entirely at my disposition, and then proceed to the ligature of the hæmorrhoidal tumours in the following manner:—Transfixing the largest of them with a tenaculum, I cut through the integument at its base with a scissors, around its external half, and as much more as seems desirable at the moment, and pass the tenaculum to an assistant, with a request to draw gently upon it. I then pass a stout surgeon’s needle, armed with a double ligature, from without inward, deeply through the base of the tumour, and, drawing it out through the mucous membrane within, cut loose the needle, and tie tightly, so as to strangulate the included tissues thoroughly on either side, leaving for the present the ends of the ligatures uncut. This procedure is repeated upon each of the remaining tumours, of which there are rarely more than four or five, sometimes only one or two. With the tenaculum and curved scissors the strangulated tumours are then cut away to within a safe distance of the ligatures, the ends of which, having been meanwhile useful in drawing apart the sides of the dilated opening, so as to facilitate thorough inspection, are now cut short.”

In the midst of the many more complicated devices of the present day, it is gratifying to find the good old practice of ligature still holding its ground against all comers. Van Buren’s opinion on the much-discussed subject of the admissibility of laparotomy in intussusception will be read with interest:—

“I cannot discuss, here and now, the considerations which influenced Brinton, in 1867, and Ashhurst, in 1871, and others who have carefully studied the history of this subject, to conclusions against abdominal section or gastrotomy, as it was then called, in intussusception; but the reasons justifying interference given by Hutchinson, Marsh, and Sands, and, above all, their success, seem to me to make it our duty, in the presence of so hopeless a condition as prolapse with invagination of this kind, to stand ready to imitate them. In addition to the increasing confidence inspired by anæsthesia and antiseptics, and the decreasing fear of peritonitis derived from the experience of the ovariologists, the two principal reasons which make it proper to assume this position are these:—1. The certainty of diagnosis derived from the presence and

peculiar features of the rectal tumour or protrusion. 2. The almost utter hopelessness of the prognosis without interference, which includes the poor chance of benefit from forced injections, &c., as well as the rarer possibility of sloughing."

Again, on the great question of the propriety of operation for cancer of the rectum, our author asks the pertinent question—

"Can surgery do any more than medicine in cancer of the rectum, beyond simple palliation?"

He answers :—

"Although, as I have already shown, benign adenoma may be mistaken for true cancer, and as such a case, if subjected to extirpation, may have gained unmerited credit for the operation, yet it would certainly be good surgery to give a patient the benefit of a doubtful diagnosis, and endeavour to effect a cure by prompt and thorough removal. This course would be more surely a proper one, since adenoma liable to be taken for cancer would also call for removal, and the operation of extirpation has been demonstrated by recent experience to be a fairly safe proceeding; and, in view of the uncertainty as to the point at which 'adenoid disease' may merge into fully developed cancer, it is, in my judgment, in well-selected cases justifiable. In nine cases, for which I have been more or less directly responsible, the operation has been recovered from in all. In these cases, several of which were not selected with the rigorous care which, with fuller experience, I should now consider obligatory, two of the patients are still in good health, after an interval of twenty months in one, and over two years in the other; and in more than one of the remaining cases a prolonged respite was gained."

We have quoted sufficient to show our readers the character and practical scope of Professor Van Buren's book, which may be regarded as our latest and best text-book on the surgery of the lower bowel.

OAKUM IN AFFECTIONS OF THE JOINTS.

M. CONSTANTIN PAUL, at the Hospital Lariboisière, has been employing oakum with great success in the treatment of subacute and chronic affections of the joints. It is simply wrapped round the painful joint to the thickness of one-half to one inch, and left there. He found it especially useful in gonorrhœal arthritis of the knee, in arthritis deformans, and in all cases where the application of iodine is usually recommended.—

Revue Médicale.

S. W.

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WILLIAM THOMSON, A.B., F.R.C.S.I.; Surgeon to the Richmond Hospital; Member of the Surgical Court of Examiners, Royal College of Surgeons; Examiner in Surgery, Queen's University, Ireland.

SOME POINTS IN TRACHEOTOMY.

DR. FOULIS, of Glasgow (*Glasgow Med. Journ.*, Feb., 1881), in a paper bearing the above title, urges the importance of having a series of tubes always at hand suitable to the different sizes of trachea met with at different ages. The curve should also be large, so as to avoid erosion of the inner walls of the trachea. As to the point for election of the opening of the windpipe, he observes that authorities recommend that the trachea should be incised either above or below the isthmus of the thyroid, although Erichsen, Bryant, and others, while advising us to leave the isthmus alone if possible, say that it may be cut without scruple when necessary. And it is not difficult to understand why this should be done, for in the isthmus in the middle line there are no blood-vessels, just as in the tongue or in the perinæum the middle line is devoid of vessels of more than capillary size. Hyrtl failed to inject the one side of the thyroid from the other through the isthmus. It is quite true indeed that the thyroid arteries, ramifying outside the capsule of the thyroid body, send small branches across the trachea to anastomose with those of the opposite side, but these vessels are quite outside of the isthmus, and do not belong to it. In many cases, especially in young children and people with short necks, the space between the cricoid and the isthmus is so very small that no tube could be got in without dislodging the isthmus or incising the cricoid, and, as a matter of fact, he believes the isthmus is often cut unawares in children. It occurred to him, after doing one or two tracheotomies, and seeing accidents from

the high and low operations, to select the isthmus as the safest place for incision. To this he was the more impelled by watching the result of cutting the cricoid. There is so much spring in the cartilage that the tube cannot be worn without irritation steadily leading to perichondritis and necrosis. In the last five or six cases he has cut through the isthmus, and he has reason to be satisfied with the easy access to the trachea, and absence of hæmorrhage during the operation. As to after-treatment he disapproves of the use of steam. If a single layer of dry gauze is loosely thrown over the face and neck, the air will be left warm and moist enough for all purposes.

GASTROSTOMY.

In a patient suffering from epithelial cancer of the œsophagus, with resulting stricture, Mr. George Buchanan, of Glasgow, has performed gastrostomy, the details of the operation being reported in *The Lancet*, January 1, 1881. The patient was aged sixty, and suffered from symptoms of gradually increasing obstruction of the œsophagus, until at last fluids could not pass to the stomach. An incision one and a half inches long was made across the linea semilunaris, about an inch below and parallel to the eighth left costal cartilage. The abdomen having been opened, the anterior wall of the stomach was seized and drawn through the wound. Two acupuncture needles were introduced into this portion of the viscus, at a distance of one and a half inches apart, and the ends were made to rest on opposite sides of the wound. The stomach was now carefully stitched by the carbolised silk sutures to the edges of the wound, and an incision about an inch in length made through the wall of the organ, between the rows of stitches, with a pair of scissors. A smaller transverse incision was now made, and the resulting corners secured to the lips of the wound in the abdominal wall. An India-rubber tube was next introduced into the stomach, and fixed by lateral strings, and from this tube some drainage took place for three days, the patient being meanwhile fed by the rectum. On the fourth day half an ounce of milk and a drachm of brandy were introduced into the stomach through the tube. This was continued at suitable intervals, but the patient gradually sank, and died in a fortnight of asthenia. Good union had taken place between the stomach and the abdominal wound.

Mr. J. Bryant records two successful cases (*Lancet*, April 9,

1881). The first was a girl who had attempted to commit suicide by drinking sulphuric acid. She recovered from the immediate effects of the acid, but in time stricture of the œsophagus occurred. Gastrostomy was determined upon, and an incision three inches long was carried obliquely below the margins of the left ribs. The stomach having been found, was brought well forward to the surface of the wound. "Great care was observed to keep the parts well sponged, to guard against anything passing into the peritoneal cavity. Two loops of fine carbolised silk were then introduced through the peritoneal covering of the stomach about a third of an inch apart, and with these and a pair of tenaculum-pointed forceps the stomach was kept *in situ*. The ends of the loops were left long. The stomach was next carefully fastened by a series of interrupted sutures to the margin of the skin around. The sutures merely included, on the one hand, the peritoneal covering of the stomach, and, on the other, included neither the parietal peritoneum nor the divided muscles, but the skin alone. The stomach at this stage of the operation was not opened. The patient was fed by enemata; there was no elevation of temperature (the operation was done under carbolic spray), and on the sixth day the stomach was opened. The opening made was not more than an eighth of an inch long. It was made by elevating the stomach by means of the two loops which had been introduced through the peritoneal covering of the stomach at the first stage of the operation, where the ends had been left long, and cutting with a narrow tenotomy knife from loop to loop. The loops were then removed." An India-rubber tube was introduced into the stomach through the small opening, and milk was poured in. In three months the girl gained 19 lbs. in weight. There has never been any escape from the stomach, and this Mr. Bryant attributes to the smallness of the opening and the elasticity of the walls of the stomach—the artificial opening yielding readily to the introduction of the obliquely cut end of the tube, and closing on its removal by its own elasticity.

In the second case the operation was performed on a man, aged sixty-one, for cancer of the œsophagus, but death occurred two months afterwards from extension of the disease.

SUTURE OF THE FRAGMENTS IN FRACTURE OF THE OLECRANON.

Mr. W. MacCormac has submitted to the Clinical Society of London a case of ununited fracture of the olecranon process, in

which bony union was obtained by suture of the bones (*Lancet*, June 4, 1881):—

“The patient (who was exhibited) was a piano-tuner, twenty-six years of age, who four months before coming to St. Thomas’s Hospital had fallen upon the right elbow, and sustained a fracture of the olecranon. When admitted the limb was wasted, especially the triceps; there was no power of active extension; the line of fracture ran across the base of the olecranon, the detached portion being separated by two inches, and fixed to the back of the humerus, the condyles of which could be felt in the gap, no uniting medium being perceptible. On Jan. 6th, Mr. Mac-Cormac made a vertical incision three inches long, exposing the fractured bone and the articulation. There was no trace of uniting material, the fractured surfaces were covered with smooth fibrous tissue, and adhesions existed between the detached process and the condyles, and also between the end of the humerus and ulna. These adhesions were dissected out, and the periosteum being reflected, a thin layer of bone was cut off with a chisel, and by means of two wire sutures through holes drilled in the bone the surfaces were brought into close apposition. The wires were twisted and cut off so as to project at the centre of the wound, which was afterwards closed with catgut sutures. The operation was performed antiseptically, the joint being washed out with carbolic solution (1 in 30) before closing the wound. The first dressing was made on the fifth day, when the wound was found to be united, except where the bone sutures emerged, and these were removed in twenty-one days. In forty days the patient left the hospital with very good active movement at the elbow joint, and apparently firm bony union at the seat of fracture. From first to last he had no pain or inconvenience. The wound healed without a drop of pus; the temperature occasionally rose to 99·8°; it was otherwise normal throughout. He has now perfect power of active extension. The arm cannot be made absolutely straight, but he is able to follow his trade as well as before.”

RESECTION OF THE INTESTINE.

Kœberlé, of Strasburg (*Gazette Hebdomadaire*, Nos. 4, 5, 1881, and *American Journal of the Medical Sciences*), reports a case in which he removed six and a half feet of intestine, followed by the patient’s recovery. A young lady, aged twenty-two, had suffered frequently from colic, and in October, 1880, symptoms of intestinal strangulation occurred twice in fifteen days. Since then she had suffered from persistent colic, which gave her no rest, and which could hardly be subdued by hypodermic injections of morphia. Gastrotomy was performed on November 27. There were four

strictures, involving six and a half feet of small intestine, the lightest having a diameter of $\cdot 004$ m. ($\frac{1}{6}$ inch). The portion of intestine was altogether removed between two ligatures. Twelve vessels were tied. The ligatures from the two free ends of the intestine were tied together in such a manner as to lay the sides opposite to the mesentery in apposition, the most favourable condition for enterectomy, and they were attached to the fibrous tissue of the *linea alba* through a suture, which retained them in contact with the peritoneum at the inferior angle of the incision. The ligatures of the mesentery were brought out at the inferior angle of the abdominal incision, where they were retained, together with the sutures of the intestine, in a fixed position. The superior part of the wound was partially closed. Enterotomy was performed on the third day. The ligatures and sloughs separated from the 12th to the 13th day. The first alvine discharge took place on the 20th day. On the 25th the communication with the intestine was almost closed, and six weeks after the operation the external wound was also closed and healed. The patient feels quite well, and suffers no gastric disturbance. The operation was not done antiseptically.

Three other cases are recorded by Czerny (*Berlin klin. Woch.*, No. 45, 1880, and *Med. Record*, April 15, 1881). In two a coil of intestine, which had become gangrenous as a strangulated hernia, was removed, and in the third a malignant tumour of the colon was removed. In one of the first two instances the patient recovered without fever or reaction of any sort; in the second the patient died during the operation in a fit of vomiting. In the third case a woman, aged forty-seven, had a tumour in the abdomen, which was diagnosed as an intestinal cancer. When the abdomen was opened a large tumour of the transverse colon was found firmly attached to a coil of the sigmoid plexure. Part of the sigmoid was first resected, the ends being brought together by thirty-three sutures. Lastly, a wedge-shaped piece of the mesocolon was removed, also necessitating ligature. A drainage-tube was inserted, and the wound in the abdomen closed by means of four deep and eight superficial sutures. The patient recovered, and was living half a year after the operation, although a recurrence is inevitable. The procedure is as follows:—The intestine being compressed above and below, the diseased part is removed, along with the corresponding wedge of the mesentery. The ends are now disinfected, and a double row of carbolised silk sutures

applied. Those in the first row include about a twelfth of an inch of the serous and muscular layers of each end of the intestine, and are about a twelfth of an inch apart. A second row of sutures, about a fifth of an inch apart, are applied over and partly including the first. The intestine is then returned into the abdomen, and antiseptic dressing applied.

TREATMENT OF VESICAL CATARRH BY ESTABLISHING URINARY FISTULA.

Dr. Hayes Agnew suggests a very formidable procedure for the treatment of cases of vesical catarrh (*Phil. Med. Times*, Feb. 12, 1881). He says:—

“In hopeless cases of chronic cystitis it has occurred to me that the life of the patient might be made comfortable by separating the connexion of the ureters with the bladder and bringing them out through the abdominal walls, establishing fistulæ either in the iliac or in the lumbar region, and thereby diverting the urine entirely from the bladder. That such a route for the escape of the urine is not so objectionable as might be supposed will appear from the experience of two persons in this city who suffer from urinary fistula occasioned by accident, one of whom is able to attend to his occupation—that of a daily labourer—by swathing the body with a thick roll of bandage, by which the urine is absorbed. If the fistulæ were favourably situated, mechanical appliances might be constructed in which to receive the urine. The feasibility of the procedure proposed I have satisfactorily verified by dissection and operation on the cadaver. At first I supposed the proper route to the ureters would be through the loin, as in lumbar colotomy; but the colon on each side is an obstacle which cannot readily be overcome. The plan which I pursued was to make an incision beginning one inch below the anterior extremity of the last rib, and terminating two inches below the anterior superior spinous process of the ilium. After dividing the skin, superficial fascia, external and internal oblique and transversalis muscles, the transversalis fascia is next broken up, together with the loose tissue connecting the peritoneum with the iliac fossa. It only remains to detach carefully the serous sac until the primitive iliac vessel is reached, at the bifurcation of which into external iliac and internal iliac the ureter will be found to pass into the pelvis. Following the tube down, it should be severed as near to the bladder as possible, two ligatures having been previously applied (the lower one catgut), and the division made between the two threads. To relieve any tension on the ureter, a puncture is next made through the parietes a short distance above the upper angle of the wound, and the urinary duct piloted through by

means of a probe secured to the end of the ligature previously attached to the ureter. It only remains to detach the thread from the duct and to secure the latter by two stitches to the external opening, after which the main wound can be closed. It would not be proper to operate on both ureters at the same time. The patient should be allowed to recover from the first before proceeding to the second. Nor would such a surgical procedure be advisable, if there was reason to believe that the kidneys were seriously implicated."

THE DIAGNOSIS OF CANCER OF THE RECTUM.

Dr. Charles B. Kelsey (*New York Medical Journal* for April, 1881, and *Glasgow Medical Journal*, May, 1881) gives a study of the different forms of cancerous disease met with in the rectum, the chief characteristics of each, and the methods of diagnosing one from the other, and all of them from non-malignant ulceration and stricture. The varieties are enumerated, in the order of frequency, as epithelioma, scirrhus, encephaloid, colloid, melanoma, and osteoid. Of epithelioma he makes two varieties, the lobulated and the cylindrical. The former is the variety most often seen on the lip, and when found at the rectum it begins as a warty growth at the verge of the anus; the latter has its favourite site in the rectum proper, above the internal sphincter, where it forms a soft, friable mass on a hard ulcerating base, causing a fœtid discharge of blood and pus. Scirrhus is most apt to be mistaken for long standing non-malignant disease, and is best distinguished from it by the clinical history. Encephaloid may be found on section either comparatively firm, or nearly fluid; it is very often vascular, and, when its enclosing capsule has burst, a protruding, fungous mass is the result; its growth is very rapid and it attains to great size. In colloid the structure is nearly the same as in encephaloid, except that the alveolar spaces are filled with jelly-like material. The author has collected ten cases of melanoma of the rectum, which he believes to be all on record. This variety is easily diagnosed by its gross appearances. Of osteoid cancer, which is also easily distinguished, he has found but one case where the growth was manifestly from the rectum, and not primarily from the pelvic bones. The symptoms of the disease are divided into pain; those due to contraction, to ulceration, to invasion of neighbouring parts; and lastly, the generalisation of the disease. There is nothing in the symptomatology to distinguish a malignant from a non-malignant stricture, and the diagnosis must rest upon the

history and the physical examination. Dr. Kelsey uses artificial light for his rectal examinations, and describes an arrangement for this purpose, on the same plan as that of Tobold's laryngoscope, the light being movable to any part of the room. With this and a forehead mirror the rectum may be thoroughly illuminated. Fortunately for the diagnosis, most cancerous as well as most other strictures of the rectum are located within reach of the finger. The sensation imparted to the finger is peculiar, and is not easily described. In the early stage, when the mass is firm and hard, and yet circumscribed, and before ulceration has taken place, the disease is not easily mistaken. After sloughing has occurred the appearance of the mass and its feel are diagnostic. Disease at the upper limit of the rectum is best examined for through the abdominal wall. The author has little confidence in explorations of the sigmoid flexure *per rectum*, believing them very apt to mislead. With the finger it can be decided whether extirpation or rectotomy is allowable; and, if the disease is beyond the reach of these measures, there is but one point to be decided—whether colotomy should be done on the right or on the left side, a point which can generally be settled without running the risk of fatal exploration with an instrument.

SO-CALLED RUPTURE OF THE INTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT.

IN a thesis submitted for graduation at the College of Physicians and Surgeons, New York, and published in the *New York Medical Journal* for June, 1881, Dr. Charles A. Jersey questions the existence of the condition known under the name of rupture of the internal lateral ligament of the knee-joint, and expresses his opinion, on the strength of clinical observations and experiments on the cadaver (the latter having been performed in the prosector's room at the college, under the direction of Dr. William T. Bull), that the injury in question really consists in a fracture of the tuberosity into which the ligament is inserted. He sums up his conclusions as follows:—1. Many cases of so-called rupture of the internal lateral ligament of the knee-joint are in reality cases of fracture of the internal tuberosity of the condyle. 2. Many of the more severe sprains are fractures of the tuberosity. 3. The absence of bony crepitus is no certain sign of the non-existence of fracture at this part. 4. The diagnosis rests upon the extreme lateral motion, the severity of the pain on manipulation, the localised pain always found at a certain point, and the length of time required for complete recovery.



REPORT ON RHINOLOGY, PHARYNGOLOGY, AND LARYNGOLOGY.

By KENDAL FRANKS, M.D., Univ. Dub.; F.R.C.S.I.; Surgeon to the Adelaide Hospital; Surgeon to the Dublin Throat Hospital, &c.

I. RETROPHARYNGEAL ABSCESS IN THE INFANT.

II. NOTES ON TRACHEOTOMY.

III. THE THERMO-CAUTERY IN TRACHEOTOMY.

IV. REMOVAL OF LARYNGEAL POLYPI BY MEANS OF A SPONGE.

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VI. ACUTE RETROLARYNGEAL ABSCESS.

VII. BILATERAL PARALYSIS OF THE VOCAL CORD, WITH SPECIAL REFERENCE TO DIAGNOSIS.

VIII. TUBERCULOSIS OF THE LARYNX.

I. RETROPHARYNGEAL ABSCESS IN AN INFANT.

DR. JAMES CARMICHAEL (*Edinburgh Medical Journal*, July, 1881) relates the case of an infant five weeks old who caught cold exhibiting all the symptoms of coriza. Two days afterwards the cervical glands began to enlarge, and on the third day respiration became impeded:—"The throat on the left side in the region of the tonsil was much swollen, and appeared as if an abscess were forming." The left half of the tongue was œdematous and sausage-like. The next day Dr. Carmichael was sent for, the usual attendant being absent from home. On entering the room he found the infant in its mother's arms. Before he had time to examine the child or ask any questions, blood gushed from its mouth and nostrils, and in the course of two or three minutes the infant died, the amount of blood lost being about five or six ounces. On *post mortem* examination a sloughy-looking abscess cavity, containing dark, unhealthy pus, was found external to and behind the left tonsil, communicating with the pharynx. The internal carotid artery communicated with this cavity by means of a rugged opening in its wall. The coats of the artery in the neighbourhood of the abscess were thinned and softened, and in a commencing sloughing condition.

II. NOTES ON TRACHEOTOMY.

Dr. David Foulis (Glasgow), in the *Archives of Laryngology* (December, 1880), gives the results of his experience derived from twelve cases in which he performed tracheotomy. He considers the tubes generally made for children to be too large, being generally 5 mm. diameter, external measurement at the point. M. Marc Sée has demonstrated that the diameter of trachea at birth is not more than 4 or 5 mm., and that for several months after birth this size is not much altered. Hence a tube of 5 mm. diameter would completely fill the trachea, and might cause erosion if left in for any length of time. In order to carefully adapt the tube to the individual case, Dr. Foulis employs five tubes graduated to scale according to M. Marc Sée's measurements. They are as follows:—Below 18 months, diameter = 4 mm.; 18 months to $2\frac{1}{2}$ years, 6 mm.; $2\frac{1}{2}$ years to 10 years, 8 mm.; 10 years to 20 years, 10 mm.; largest size, 12 mm.

Contrary to the traditional dread of injuring the isthmus of the thyroid gland when opening into the trachea for fear of the resulting hæmorrhage, Dr. Foulis has come to the conclusion that the proper place to make the incision is through the isthmus. The low operation is fraught with much greater dangers. The high operation requires, especially in children, the dislodgment of the isthmus or division of the cricoid:—"If a tube is to be worn it is better not to have the cricoid cut, for its elastic spring keeps up a continual pressure on the tube, leading slowly to irritation and, it may be, perichondritis." He prefers removing a piece of the anterior part of the cricoid when its division is necessary.

Dr. Foulis is not a believer in the use of steam in the after-treatment of cases of tracheotomy:—"No steaming is needed; by a piece of gauze loosely thrown over the face and neck the air will be kept warm and moist enough for all purposes. It cannot be a good thing for a patient to have a chill fog playing over an open tracheotomy wound, as happens when steam is blown even out of a hot kettle into the air over the patient; nor does it seem good practice to enclose the bed in a tent of blankets into which steam is poured, for the free accession of pure air is thereby certainly not aided. I prefer to have the patient warmly clad, lying near the fire, but out of draughts, and with abundance of fresh air."

III. THE THERMO-CAUTERY IN TRACHEOTOMY.

Dr. Jules Bœckel advocates strongly the use of the thermo-cautery in tracheotomy, and gives an epitome of twenty-four cases in which he thus operated in two years. Previous to these he published the results of seven cases, which, however, left him in doubt as to the superiority or otherwise of this cautery over the bistoury. Surgeons have been far from agreed as to the use of the thermo-cautery in this operation. M. Verneuil, in a letter to M. Krishaber (*Annales des Maladies de l'Oreille et du Larynx*, T. II., No. 3), declares himself strongly biased in its favour. It is a powerful bloodless agent:—"I recommend you to try it in tracheotomy. . . . If it succeeds, the cause we advocate will gain much, for the thermo-cautery has none of the objections raised against the galvano-cautery." M. Desprès, on the other hand, declares that "the operation is longer and causes enormous scars," and again, "this procedure involves the isthmus of the thyroid body. It cannot therefore be hæmostatic. The bistoury alone is applicable in difficult cases." M. Bœckel's first seven cases were all cases of croup or diphtheria. In these he employed the thermo-cautery to divide all the tissues down to the trachea, generally using it at a *white* heat, but the trachea itself he opened with the bistoury for fear of any subsequent contraction—a fear which he has since learnt was hypothetical. As regards hæmorrhage these cases yielded the following results:—In two cases it was completely absent. In the first the operation was carried through to its termination without the loss of a single drop of blood, in spite of the division of the thyroidean isthmus and the presence of veins gorged with blood. In the second the only hæmorrhage that occurred was from the tracheal mucous membrane, which was divided with the bistoury. In three cases the bleeding was insignificant. Finally in two cases the thermo-cautery did not fulfil the expectations of the operator. In both of them there was brisk hæmorrhage from the divided isthmus of the thyroid gland, which the cautery failed to arrest, and which was stopped only by the use of the hæmostatic forceps and pressure. This result M. Bœckel attributes rather to an over-zealous assistant who had charge of the cautery than to the instrument itself.

As to the resulting cicatrices, no objection can be raised on this score. No doubt the wound is larger than when done with the bistoury, and takes longer to heal, but, on the other hand, it is

never followed by sufficient contraction to diminish the calibre of the trachea, and moreover the wound has not proved liable to be attacked with diphtheria.

In conclusion the author summarises thus in 1878:—

1. The objections raised against thermo-tracheotomy are not tenable, with *the exception of hæmorrhage*.

2. The thermo-cautery does not absolutely abolish the risk of hæmorrhage.

3. Tracheotomy with the knife yields in a large number of cases results analogous to those obtained with the thermo-cautery as regards bleeding.

4. The choice of the best method to be employed is still undecided.

5. Following the directions given for its use, to a certain extent, this serious complication may be avoided, but the thermo-cautery should not be used too confidently or rashly for fear of grave mischances following.

In his second communication on the subject Dr. Bœckel records twenty-four additional cases of thermo-tracheotomy, which have made him modify the conclusions previously arrived at. "To-day," he says, "that I have acquired in the manipulation of this instrument a greater experience I can affirm its superiority." Twenty-three of the twenty-four cases were for croup or diphtheria; one only was for necrotic laryngitis with œdema glottidis. Nine cases terminated fatally, or 37·5 per cent. There was complete absence of hæmorrhage in twenty-one cases. One case terminated fatally before the operation was begun, and tracheotomy was performed only as a forlorn hope. In one case only was the hæmorrhage serious. In almost every case the thyroidean isthmus was divided with thermo-cautery, at a white heat; hence there is no foundation whatsoever for M. Desprès' dictum, quoted above. On the other hand, division of the isthmus is a great advantage when it can be done bloodlessly. For in this situation the trachea is most superficial, and it can be opened without any fear of dividing the sub-thyroidean plexuses of veins, which often cause much trouble. Moreover, after the use of the thermo-cautery the author has never experienced any trouble from secondary hæmorrhage.

To avoid the bleeding which sometimes occurred when the trachea was opened with the knife, Dr. Bœckel on several occasions substituted the thermo-cautery. To this method of procedure

there is not the slightest objection, as he verified in one of his patients whom he saw a year after the operation. "The fear," he says, "of consecutive narrowing of the trachea after the use of the thermo-cautery, enters into the domain of hypotheses. The truth is that this complication has never happened. Fifteen of the persons thus operated on recovered. I observed them and followed them closely, with the exception of two, during a year and more. Well, I can assert that in no case has the least symptom arisen to point to a narrowing of the respiratory canal."—(*Gaz. Méd. de Strasbourg*, 1878, Nos. 9 & 10, and 1880, No. 9.)

IV. REMOVAL OF LARYNGEAL POLYPI BY MEANS OF A SPONGE.

Dr. Strauss (*Inaug. Dissert. Breslau*, 1879) strongly advocates Voltolini's method of removing laryngeal polypi by means of a sponge, which has hitherto received little favour from the profession. He describes the proceeding as follows:—A dry or wet sponge of the size of a cherry-stone or hazel-nut, well fastened to a metal handle, is introduced into the larynx while the patient intones "a." Here it is held, the laryngeal muscles contracting around it spasmodically until the patient draws a breath, when it is quickly passed between the vocal cords. This proceeding is repeated several times at one sitting. All polypi growing in the larynx, as far as the upper part of the trachea, can be reached by this method. They are broken off or contused, and afterwards mortify. This is especially the case with the smallest and most firmly attached ones, which have hitherto been the most difficult to remove. No ill effects have resulted from bleeding or from the detached portions falling into the trachea. Voltolini represents this operation as simple, and without danger. He has performed it fifteen times. In seven cases the polypi were removed at one sitting; in four cases a longer time was required to remove them. The polypi were partly pedunculated, partly broad-based; in structure they were fibromatous, papillomatous, and myxomatous. In two cases they were situated below the cords.—(*London Med. Record*, June 15, 1881.)

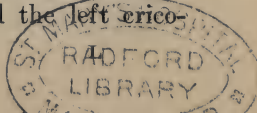
V. THE FIRST ENDOLARYNGEAL OPERATION UNDER ETHERISATION.

Schnitzler (*Wiener med. Presse*, Nos. 48, 49, 1880) gives the full details of the history of a case of laryngeal papilloma, in a

child of eight years, which he successfully removed at the first sitting, the patient being, during the operation, under the anæsthetic influence of ether; and he calls special attention to the case as being the first in which this method has been employed. The details of the operation will be found full of interest, and Schnitzler's remarks upon it practical and sensible. He does not underrate the difficulties and even dangers of an operation in the interior of the larynx under these circumstances, but, happily, he has been able to overcome them. The little patient's mouth was held open by means of a dilator, the tongue drawn out and held by forceps, the laryngeal mirror introduced into the fauces (secretion does not appear to have embarrassed the procedure), and the growth seized and removed by forceps in the usual manner—the whole operation not lasting more than two or three minutes, according to the operator.—See *Gaz. Hebdom.*, No. 39, 1880 (*Archives of Laryngology*, April 1, 1881).

VI. ACUTE RETROLARYNGEAL ABSCESS.

Merklen (*France Médicale*, Feb. 18, 1880) reports the case of a cook, aged fifty, who, ten days after the termination of an attack of ordinary tracheo-bronchitis, was suddenly seized with intense laryngitis, characterised at first by a simple alteration of voice, then by progressive dyspnœa, and shortly afterwards by orthopnœa. She was brought to the hospital, and examination revealed acute œdema of glottis. The urine was albuminous, but this was regarded only as a coincidence, and probably the result of the same chill which caused the laryngeal trouble. Emetics and similar methods of treatment affording no relief, tracheotomy was performed, a profuse venous hæmorrhage being the only untoward circumstance which occurred. As the dysphagia continued complete and painful, and everything which she attempted to swallow being regurgitated through the cannula, she was ordered nutrient enemata. On the second day she succumbed to a slow process of asphyxiation. A *post mortem* examination confirmed the diagnosis of acute œdema of the larynx. The superior orifice of the larynx was completely blocked by the enormous tumefaction of the aryteno-epiglottic folds. The vocal cords were simply reddened and slightly swollen. The posterior wall of the larynx was the seat of considerable gelatinous infiltration which contained a small cavity filled with pus, about the size of a small nut. There was in this situation a true abscess developed round the left crico-



arytenoid articulation, which was itself destroyed. The abscess was the result probably of a phlegmonous inflammation of the cellular tissue, so abundant in the aryteno-epiglottic folds; or there may have been a primary lesion of the arytenoid cartilage or of the crico-arytenoid articulation. Be that as it may, the fact of an acute primary abscess of the larynx remains, and is very exceptional.—(*Revue des Sciences Médicales*. Hayem. Oct. 18, 1880.)

VII. BILATERAL PARALYSIS OF THE VOCAL CORDS, WITH SPECIAL REFERENCE TO DIAGNOSIS.

Dr. M'Call Anderson (*Edinburgh Med. Journ.*, July, 1881) relates the case of a man who for six months had suffered from more or less complete aphonia, and who during part of that time had been treated by means of the induced current to the interior of the larynx. Laryngoscopic examination revealed that the abductors and adductors were all paralysed, the vocal cords maintaining the "cadaveric position,"—i.e., midway between complete closure and complete opening of the glottis. A pulmonary examination showed signs of an intrathoracic tumour, which Dr. M'Call Anderson concluded to be aneurismal, and treated accordingly. The case, however, terminated rapidly after a sudden hæmoptysis. A *post mortem* examination discovered an aneurism about the size of an orange springing from the posterior wall of the whole of the transverse part of the arch of the aorta, but particularly from the left side. It seemed doubtful whether the right recurrent nerve could have been pressed on during life, though the left was subjected to great pressure, as it wound round the tumour. This bilateral paralysis of the vocal cords, when one nerve is alone affected, is explained by reflex paralysis (Dr. G. Johnston), or by central disease set up in the nuclei of the spinal accessory nerves from which the pneumogastric receives most of its motor fibres (Mackenzie).

VIII. TUBERCULOSIS OF THE LARYNX.

The subject of tubercular disease affecting the larynx, pharynx, and mouth, has been receiving much attention lately, and was the subject of an interesting discussion at the meeting of the American Laryngological Association of 1880. That tubercle does occur in these regions, and passes through all the phases which true

tubercle is known to do in other regions, is now almost universally acknowledged. The discussion on this disease has shifted its ground, and the points which at present are exciting controversy in relation to it are—in the first place, whether true tubercle can originate *primarily* in these regions, or whether it occurs only secondarily to tuberculosis in the lungs, the pulmonary affection in these cases being simply undetected previous to the manifestation of the laryngeal complications, owing to the difficulties, sometimes the impossibility, of recognising by auscultation and percussion the earlier changes produced in the lungs by phthisis; in the second place, whether the character of tuberculous ulceration in these parts are sufficiently pathognomonic to diagnose it during life by its appearance alone. The former of these two questions can be answered finally only by the *post mortem* examination of cases, which may prove the larynx to be the subject of tuberculosis, whilst the lungs can show no evidence of disease. At present no such autopsy has been recorded. The points have been ably discussed by Lennox-Browne in a paper entitled “Cases of Tuberculosis of the Mouth and Throat” (*Archives of Laryngology*, Vol. II., Jan. 1, 1881). The cases are five in number. In the first two recorded the pulmonary disease coexisted with or preceded the manifestations of tuberculosis in the larynx. In Case III, the usual laryngeal signs were noted *two years before* any physical signs could be detected in the lungs, though the patient had been subjected to repeated examinations in London and in France. Case IV. is recorded as one of “tuberculous ulceration of the *tongue* two years and a half prior to laryngeal or pulmonary manifestations;” and in Case V. these manifestations were preceded by tuberculous ulceration of the *gums and fauces* for nearly *three* years. Dr. Browne leans towards the opinion that tuberculosis may occur primarily in the mouth or throat, though he does not think it desirable, “in the present state of our knowledge, to enforce the theory that there can be tuberculous disease in either of these regions independent of a similar lesion in the lungs.” The five cases reported, which the author tells us “were by no means specially selected,” favour this theory. They show that the patients not infrequently give an account of loss of voice, laryngeal pain, and difficulty of deglutition, prior to the appearance of any symptom of pulmonary disease; whilst in several of the cases, and especially in Case III., the disease was diagnosed in the throat or mouth when the lungs were still healthy, or, at all events, at a

time when the eye could distinguish the visible changes in the larynx long before the changes, if any, in the lungs were appreciable to the faculty of hearing.

The symptoms of laryngeal tuberculosis are thus briefly enumerated:—Emaciation and loss of weight, night sweats, cough with profuse laryngorrhœa of semi-purulent character, pain only in deglutition, more marked in the case of fluids, with tenderness on pressure of the larynx—these all afford an unmistakable picture. The diagnosis is corroborated by the appearances seen in the laryngoscopic mirror. These are—a peculiar semi-solid swelling and a worm-eaten ulceration of the epiglottis and aryteno-epiglottic folds. “The swelling is often much greater on one side than on the other, but we never see tumefaction of the tissues covering one arytenoid cartilage much advanced without a similar condition existing to some extent over the other side also, thus distinguishing it from cancer and the non-tuberculous perichondritis.”

On the second of the points at present at issue Mr. Browne holds decided views, and our own experience corroborates his. Von Ziemssen’s opinion, that “neither the catarrh nor the ulceration of phthisical subjects presents any characteristic signs by which it could be distinguished during life,” is quoted, and, though supported by such laryngologists as Mackenzie, Cohen, Heinze, and others, is strenuously opposed by Mr. Browne, who cannot “admit the non-existence of a truly characteristic tuberculous ulceration in the larynx.” The chief features of this ulceration are thus given:—“The floor of a tuberculous ulcer is pale and granular and slightly depressed, the margins are fairly well marked but not deeply excavated, the surrounding parts pale and languid, and there is the appearance of a spreading process of erosion very comparable to that of the nibbling of a small rodent animal. This is due to the confluence of small ulcers produced by the slow, incurable inflammation of the mucous and closed follicles of the mucous membrane, and also to the ejection of minute tubercles which have worked their way to the surface.” These ulcers differ, therefore, essentially from those seen in either tertiary syphilis or in cancerous disease.

The prognosis in tuberculosis of the larynx is unfavourable, and seems to bear a direct proportion to the difficulty in swallowing. To this odynphagia the frequency of a rapidly-fatal issue is due, as it prevents the taking of proper food, and thus adds the effects of starvation to that of uncomplicated phthisis.

The treatment of this disease is purely palliative. The indications enumerated are—

1. To counteract the general phthisical processes.
2. To allay the cough.
3. To relieve the pain in swallowing.
4. To heal the ulceration.
5. To check perspiration and profuse laryngorrhœa.
6. To administer suitable nourishment.

Besides the usual rules as to climate and hygiene, cod-liver oil, especially when combined with maltine, and the hypophosphites are especially recommended. A well-thickened mixture containing small doses of morphia is most efficacious, when slowly sipped, in allaying pain and cough. The most generally useful local application is one of chloride of zinc, morphia, glycerine, and water. The insufflation of powdered starch with morphia has not been found by Mr. Lennox-Browne to facilitate deglutition. As an application for constant use, and especially before food-taking, he recommends an ounce each of compound tincture of benzoin and paregoric, with a drachm of tincture of belladonna, mixed with the yolks of two eggs and water added to six ounces.

To check perspiration and profuse laryngorrhœa the author administers $\frac{1}{75}$ to the $\frac{1}{50}$ of a grain of sulphate of atropia in pill. The sucking of ice also is useful in dulling the pain in deglutition. Operative interference is condemned. There is no reason for hoping for good results from the use of the galvano-cautery. Scarification of the œdematous parts may seem urgently required, but it is followed by the rapid spread of ulceration at the punctured points. Tracheotomy should not be performed. The enfeebled condition of the patient, the entrance of cold air into the lungs, the irritation caused by the presence of a tracheal cannula, combine to render any benefit to be derived from the operation as exceedingly doubtful.

At the American Laryngological Association, Session 1880 (*Archives of Laryngol.*, April 1, 1881), Dr. J. Solis Cohen read a paper, entitled "A Case of Primary Tuberculosis of the Larynx." The subject of the communication was a man, aged twenty-nine, who consulted him for sore throat of four months' duration. By occupation the driver of an ice-wagon, he had to begin work at 7 a.m., and was exposed to changes of weather. His great complaint was of intense pain in deglutition. His voice was good, nutrition apparently unimpaired, general strength well conserved, tempera-

ture normal, and pulse 90 in the minute. There was no cough, and there were no abnormal sounds heard on auscultation and percussion. Laryngoscopic inspection revealed a much thickened epiglottis, very pallid in aspect, and with the omega-like compression well developed. An irregular racemose ulcer was visible upon the thickened edge of the epiglottis on the left side. A second ulcer, of like configuration, occupied the left glosso-epiglottic ligament, and extended to the base of the tongue. The supra-arytenoid eminences were enlarged and clubbed, and were overlaid with pale pultaceous deposit. The vocal cords were completely concealed by the tumefaction of the deeply-congested ventricular bands, but from the character of the voice they were presumed to be healthy. "The aspect of the parts was unmistakably that of tuberculosis, but the most rigid exploration failed to reveal any evidence of pulmonary lesion."

The pain on deglutition was intense. Solid food could not be swallowed at all, and fluids had to be taken in small quantities. Eight days afterwards the ulceration began on the right side, so that in a few days both sides were symmetrical. Eventually the serpiginous process almost encircled the epiglottis. In a few days the uvula became œdematous, and a slimy, serpiginous ulcerative process began to mount the right palato-glossal fold. Physical exploration of the chest now revealed dulness at the left apex for the first time (about twenty days after the first examination was made). Within a week this dulness extended over the upper lobe of the lung, and the opposite side began to be dull on percussion. The patient succumbed to the disease two months later. On *post mortem* examination, "tuberculous deposits were noticed in spots on the pleura of the left lung. Incisions revealed several small cavities in the upper lobe of the left lung, together with cheesy deposits. No cavities were found in the right lung, but there were tuberculous and cheesy deposits, though less well marked than in the left lung."

A longitudinal section of the larynx exhibited under the microscope the submucous connective tissue largely infiltrated with a small-celled product, which showed in many instances a tendency to the formation of dépôts with cheesy centres.

Dr. Cohen concludes that this is an instance of tuberculosis *commencing* in the epiglottis, invading the tongue, &c., with *secondary* tuberculosis of the lungs.

In the discussion which followed, many and various views found

expression, but the opinion which seemed to enlist the greatest amount of favour was that the disease existed probably in the lungs before its manifestations were observable in the larynx—the larynx being simply the first place where it was detected. The question of the possibility of primary tuberculosis in the larynx was considered to be still *sub judice*.

Dr. Schmidt (*Wiener med. Presse*, No. 37, 1880) enunciates views on the subject of laryngeal tuberculosis, which differ widely from those held by nearly all other writers on the subject. He considers it in many cases a curable disease, and recommends both a medical and surgical line of treatment:—"The first presents nothing new, the second is simply astounding. The principle of the medical treatment is based on disinfection. Of the first importance is it, he tells us, to disinfect the wound surfaces, and thereby cause them to heal; moreover, by the same means, to prevent the inhalation of deleterious matters into the lungs, and perhaps to exercise a favourable influence, through the inhalation of medicated disinfectant steam or spray, upon the morbid process existing in the latter. He adds that he has never known it to do anything specially remarkable, but that at least it does no harm. For the purpose of inhalation he uses carbolic acid and Peruvian balsam—more lately creasote-glycerine. The patient inhales the steam of hot chamomile water, thus medicated, from an ordinary vessel, through a paper funnel. If there be much cough a little chloroform is added. As a rule, with a pale mucous membrane, chamomile water with carbolic acid is used; when it is congested, the same water in greater quantity, with balsam of Peru. Dysphagia yields rapidly to the inhalations, he tells us, with or without decrease of the infiltration. The superficial flat ulcers yield in a few weeks, but deep ulceration is always slow in taking on reparative action. In swelling of the epiglottis these means have failed, but perhaps bathing the parts with creasote-glycerine (1 part to 40 alcohol and 60 glycerine) will yield better results. Pelan and Bordenhave recommend it so highly that further trial must be made. The use of brushes, sponges, and the like, is condemned. The inflamed parts must not be touched or mechanically irritated.

"Schmidt admits frankly that the above treatment will often fail in reducing the infiltration or in causing cicatrisation of the ulcerations. If the former is marked, and specially if the epiglottis is involved, it will not answer, and *extensive scarification* must be

employed. This is done by means of a scissors-like instrument. The points of the blades are rounded to facilitate introduction. With these scissors large incisions can be made, and when, following them, the infiltration does not entirely disappear, they must be repeated a second or a third time. The method of doing this is as follows:—The scissors, under guidance in the laryngoscopic mirror, are introduced closed over the epiglottis, then opened, and the blades pressed downwards, one lying in the larynx, the other in the œsophagus. The cut is now quickly made directly through the interlying thickest part of the infiltrated posterior laryngeal wall. The part most infiltrated is always sought for, but is sometimes difficult to cut through accurately, on account of the laryngeal irritability of the patient.

“Much depends upon the extent of the incision—more than does upon its exact position. If it be possible, the incision is made to include in its course any ulceration of the posterior wall. As a rule, however, they lie too far inferiorly. But little pain and bleeding follow the operation; in a short time the swelling subsides and the infiltration commences to disappear, and in a few days the incision has healed. Resorption either still continues, or a second operation is later performed. This is the usual course when dealing with the posterior laryngeal wall. With an infiltrated epiglottis the course is different; deep incisions or entire sections of the cartilage are not possible with the scissors, and the incisions are painful and much slower in healing. Schmidt, therefore, scarifies its laryngeal face thoroughly with a special knife; this is carried down to the cushion of the epiglottis, and the incision powerfully made through the epiglottis in its entire length as the knife is withdrawn. If the infiltration is lateral, the incision here described is made over the affected half. If it involves the whole organ, the cut is made in the median line, and, after a variable interval, one or two lateral ones. It should be made thoroughly, and at an early date, specially if the infiltration does not yield to the inhalations quickly, or when dysphagia is marked. The results are good.

“The author expresses the wish—a wish that we certainly cannot re-echo—that the instrument which he describes may be so perfected that it may be safely placed in the hands of the general profession, in order that they may, without the exercise of any special training, be enabled to perform the operation for themselves. At present, with the means at hand, it requires a certain

amount of skill to incise at the right place and deeply, and therefore will probably remain in the hands of the specialist.

“The ideas expressed in this paper as to surgical treatment are certainly new, and without question very bold, but that such heroic measures will meet with general acceptance is not to be expected. Even the author himself, towards the end of his essay, tells us that as this method does not always succeed in causing the desired cure, palliative means are needed for certain cases, to relieve or lessen the sufferings of the poor patient.”—*(Archives of Laryngology, Jan., 1881.)*

NON-MALIGNANT ULCERATION OF THE RECTUM AND ANUS.

DR. CHARLES B. KELSEY, Surgeon to the Infirmary for Diseases of the Rectum, New York, contributes to the *American Journal of the Medical Sciences* for April, 1881, an interesting paper upon the different forms of non-malignant ulcerative disease of the ano-rectal region, classifying the ulcers according to their ætiology into simple, tubercular, scrofulous, dysenteric, venereal, those due to stricture, and those due to the gangrene following the severe fevers. The importance of a thorough examination with a duck-bill speculum under ether is so obvious that it is a matter of surprise that this manipulation, furnishing the only means of exact diagnosis, is so commonly neglected. In the majority of cases the existence of an ulcer being ascertained, provided that syphilis be excluded, the ulcers in the rectum proper will belong to the first or simple variety of the disease, and will yield to local applications of bismuth, iodoform, or solution of nitrate of silver. The soft chancre is one of the most frequent of all the superficial ulcerations at the anus; and has the same characteristics as when occurring in other parts of the body. Dr. Kelsey believes in the occasional causation of stricture of the rectum by chancroid, but holds that many of the so-called syphilitic strictures are not due to this cause. True chancre of the rectum, tubercular deposit, lupus, and rodent ulcer, are so rare as scarcely to enter into consideration in the diagnosis. The extreme gravity of the symptoms, and the certainty with which when untreated, or sometimes with the best of treatment, it will end either fatally, or in a condition requiring the gravest surgical procedures for its relief, render Dr. Kelsey's remarks upon treatment of great interest. He lays particular stress upon the absolute necessity of perfect rest and fluid diet, without which, he says, no treatment will be of much avail. To them, however, he adds other remedies in the way of general medication and local applications.



PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-THIRD ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.
WILLIAM ROE, M.D., Honorary Secretary.

Saturday, May 7, 1881.

The President, DR. BYRNE, in the Chair.

Case of Double Ovariectomy.

DR. ATTHILL.—This specimen is of great interest. It consists of two tumours which I recently removed from a patient in the Rotunda Hospital. The case was, in fact, one of double ovariectomy. The woman came under my care a year ago. At that time she had an irregular movable tumour in the abdomen, as to the exact nature of which there was much doubt. I was of opinion that the tumour was ovarian, but I had grave doubts as to whether it was not malignant. The woman's health being then good, and the tumour not very large, I sent her back to the country, desiring her to return in three months' time, but she did not do so. After the lapse of nearly a year I received a letter from her medical attendant, Dr. Macnamara, of Bruff, Co. Clare, stating that she had become of enormous size; that he had tapped her twice, and removed many quarts of fluid; that her health was rapidly failing; but that he believed the tumour could not be malignant, as, had it been so, the case probably would have terminated fatally before this. At his request I admitted her again. She then measured forty-eight inches round the abdomen. She suffered much from the effects of the journey up, and, in consequence, was attacked by a low form of peritonitis, with considerable fever—and, what was most remarkable, with black vomit. This was incessant for two days, and I thought she was going to die; however, she recovered. As she suffered greatly from the distension of the abdomen, I tapped her with a very small trochar, and we drew off about

fifteen quarts of serous fluid. Previous to the tapping, the tumour could not be felt, but after it a very large and irregular tumour could be easily made out. It was very movable and solid. I also satisfied myself that there was a second tumour in the left iliac region, and the question was—what was the nature of these tumours? The conclusion I came to was that the tumour in the left iliac region was ovarian, but I was very uncertain what the nature of the larger one was. The abdomen filled up rapidly again, and she had to be tapped a second time. For some time I hesitated to operate, for, in her then state, the prospect of its succeeding was small. However, as it was quite evident that the patient would soon die if she was left alone, and as her general health was tolerably good, and as both herself and her friends were anxious that an operation should be performed, I performed it, and accomplished it without any very great difficulty. The diagnosis proved to be correct. The left tumour was ovarian, while the central one proved to be parovarian. The right ovary did not appear to be implicated. Both tumours were multilocular. The central one was of great size, and consisted of a large number of cysts, some large, many very small. I must have broken down fifteen or twenty before I could turn out the tumour, and some of these contained a considerable quantity of fluid. The large tumour was first removed, and its pedicle, which was broad, ligatured. I then proceeded to remove the other. It was an ordinary ovarian multilocular tumour, with a small pedicle, and was removed without difficulty. The most remarkable feature about it was that its surface was covered with these cauliflower-looking growths, and anyone looking at them would suppose that they were masses of epithelioma. Whether they are so or not I cannot at present say for certain, but Dr. Harvey is examining a portion of them. Round the pedicle were a large number of small secondary cysts, from the size of a pea to that of a nut. The patient at first did well after the operation. The operation was, no doubt, attended with a good deal of shock, but she rapidly recovered from it, and in twenty-four hours afterwards said she felt better than she had for six months previously. On the third day there was a slight increase of fever, and her temperature ran up to 102° , but there was no vomiting, nor the most trifling pain. The only symptoms were—rise in the pulse and slight increase of temperature during the day; much flatus passed per rectum. On the fourth day her abdomen was absolutely flat, and her temperature down to 101° . During that day her temperature rose again, and she died on the fifth day without any pain. The autopsy, which was made by Dr. G. F. Duffey, showed the existence of a moderate amount of peritonitis—not sufficient, one would suppose, to cause death. The condition of some of the other organs was unsatisfactory. The liver was adherent to the diaphragm, and it was in a very unhealthy condition, and the kidneys appeared to be affected by malignant disease. Her urine had been

carefully analysed before the operation, but nothing of importance was found in it. I look on the case as of extreme interest, and I believe it would not have terminated fatally but for the disease of the kidneys.

Fibrous Tumour of the Vagina.

DR. MACAN showed a specimen of a fibrous tumour of the vagina which he had removed the previous day from a woman, named Mary Creely, aged forty, the wife of a farmer in the County Roscommon. She had borne eight children without any difficulty, but the tumour caused great delay in her last labour, the child being born dead, and the subsequent sloughing causing a vesico-vaginal fistula. The chief point of difficulty in this case was caused by the tumour having two attachments—one for nearly two inches to the anterior wall, and a second, about the size of a five-shilling piece, to the posterior wall. After removing the tumour he had freshened the edges of the fistula and brought them together with four wire sutures. He thought the rarity of fibrous tumours of the vagina, and the fact of one having two points of attachment to the vagina, made the case a suitable one to bring before the Society.

Adjourned Discussion on Dr. Atthill's Paper on "Inversion of the Uterus."

DR. KIDD.—I believe we have all been furnished with copies of Dr. Atthill's paper. It consists of two portions. First we have remarks upon the cause of inversion of the uterus, and then remarks upon treatment. As to the cause of inversion it will be remembered that Dr. Atthill ascribes it to irregular contraction. He expresses his disbelief in the theory, at one time common, that it was caused by pulling the funis or by mechanical violence in removing the placenta. With regard to this I have only to express my full concurrence with Dr. Atthill. I believe that if it is ever produced by pulling the funis or by undue pressure at the fundus, these causes are altogether exceptional. Dr. Atthill criticises the view advocated by Barnes, on the authority of Rokitansky, that the fibres of the uterus at the placental site are paralysed and do not contract in proportion to the other fibres of the uterus, and that in this way the inversion is set up. I fully concur with Dr. Atthill's view. I believe the view he has put forward, that the inversion depends on irregular contraction of the uterus, is correct. He draws attention to the two classes of cases in which inversion takes place—namely, either after delivery, or as the result of a tumour growing in the uterus; and he made this interesting remark which, as far as I can remember, is quite original—namely, that when the placenta is attached to the fundus of the uterus (rather an unusual position as he correctly remarks) there is the greatest liability to inversion. He associates this observation with another—namely, that in cases of intra-uterine tumours,

when inversion takes place, the tumour is always a sessile one growing at the fundus. If this observation be confirmed by other observations I believe that it will prove to be of considerable interest and importance, and to have a very direct bearing on the cause of inversion of the uterus. Be this as it may, I believe that we have sufficient clinical evidence and theoretical arguments to prove that inversion of the uterus is the result of irregular contraction. We very seldom have opportunities of seeing cases of inversion of the uterus from the beginning. In the first place the occurrence is very rare; and in the next it very often takes place without having been observed. It will be in the recollection of many members of the Society that Dr. George Johnston has placed on record a case which he saw from the very earliest period, and in which he has been quite able to prove that the inversion took place without any mechanical violence whatever.

The muscular fibre of the uterus belongs to the class of unstriated or non-striated muscle. It is well known that this non-striated muscle contracts piece by piece. No muscle, it has been fully established by physiologists, contracts simultaneously throughout the whole length of its fibre. Even in striated muscle the contraction runs along like a wave, while in non-striated fibre this wave is longer and certainly slower in its passage than in the case of striated fibre. Anyone placing his hand on the uterus of a pregnant woman will feel the waves of contraction. Dr. Braxton Hicks has drawn attention to that. He has called attention to the fact that in a pregnant woman, during the latter months of pregnancy and for a very considerable time before labour, the wave of contraction may be felt going through the uterus. This is an illustration of the law I speak of, that muscular fibre contracts in waves. When you hold the uterus after the placenta has been expelled you feel something of the same kind. You will feel part of the uterus soft and part of it hard. This fact has been constantly observed, and it is, I believe, an illustration of the same law that the uterus itself contracts in segments and not uniformly through its whole extent. I have had occasion to make the same remark at meetings of the Society before now. Another fact illustrating the contraction of the uterus in segments is this:—If, some minutes after a uterus has been completely emptied, a finger be passed far up into the vagina a large hard round mass, which may be, and often has been, looked on as a defined tumour, is discovered in the anterior wall of the uterus, formed by a segment of the uterus in a state of contraction, just like the biceps muscle of the arm when contracted. If the finger be passed farther up into the os, and run along the posterior wall, there will be found another swelling, not apparently so large as the one on the anterior wall, perhaps because it is not so easily got at, and for this reason not so often discovered, but to be found if looked for, and also resembling a tumour, but like that in the anterior

wall—merely a contracted segment of the uterus. I believe these facts afford the key to the true theory of inversion. The uterus contracts in segments; the fundus, with the placenta or sessile tumour attached, is caught by a contracting segment and gradually drawn into the cavity, and ultimately pushed out through the os by the ever-advancing wave of contraction till the inversion be completed.

A few days ago Dr. Frazer told me of a case he was attending in which he was able to distinctly trace a cup-like depression in the fundus of the uterus, which rectified itself after a few minutes. I know that this has been noticed by many other observers besides Dr. Frazer, and is a well-authenticated fact. The cup-like depression in the fundus of the uterus is felt even where no violence has been used, and that cup-like depression corrects itself, and the uterus rises up again as an India-rubber ball when pressed with the finger gets back to its former position when the pressure is relaxed.

This view we have had discussed here before, especially last session, when Dr. Darby brought forward a paper on "Inversion of the Uterus," in which he expressed his belief that it was not produced by mechanical violence. I fully concur with Dr. Atthill that the true explanation of inversion is the irregular and spasmodic contraction of the uterus—the natural and wave-like contraction giving place to spasmodic and excessive contraction which carries the fundus down and causes the inversion.

As to the treatment of these cases, when the uterus is but partially inverted, and a portion of it still remains in its normal position, and only the fundus comes down, it can very easily be returned; but when a uterus is completely inverted, and the fibres have undergone much contraction, the process of reinversion is attended with very great difficulty. No man need be at all ashamed to confess that he has failed to replace a completely inverted uterus.

Here is a uterus I amputated some months ago, having failed in repeated attempts at reinversion. The inversion occurred after delivery, eight months before the patient came under my care, and was complete. The natural pear-like shape of the organ is seen to be exaggerated, the fundus is larger and the neck smaller than in the normal state. When a section is made the increased size of the fundus is seen to be due to the presence of a portion of the appendages lying in the newly-formed cavity. The uterine walls themselves are thick, strong, and firmly contracted, nowhere showing any thinning or evidence of weakness. If this were an India-rubber bag with such thick walls there would be much difficulty in reinverting it, even though it were so placed that the fullest and most unrestricted power of manipulation could be exercised—how much more difficult must it be to operate on the uterus of a living woman with very limited command over the organ.

Many methods have been suggested for the replacing of an inverted

uterus. They may be divided into classes:—1st. To commence at the small end of the pear-shaped body—that is, at the cervix—and to try to push it up first bit by bit, and finally the fundus. This is to be done by passing the hand into the vagina, grasping the uterus, and, after compressing it, pushing it as described. In one case where the uterus had been completely inverted for seven months after labour I succeeded by this method as well as in cases of more recent date. Marion Sims has suggested that it might be assisted by a process of “unrolling,” of which he gives a diagram, and I have myself attempted to gain some command over the os by fixing it with tenacula, but I cannot say I have gained much by either process. Barnes has suggested dividing the fibres that constrict the os as another way of facilitating the reinversion. 2nd. It has been proposed to indent the fundus by pressing with a finger or some instrument, but a uterus must be very thin and soft to allow of this being done. It certainly could not be accomplished in a uterus with firm thick walls as the one I have just exhibited. 3rd. Instruments have been devised, such as White’s and Aveling’s, by which pressure is made against the fundus with a view to pushing it up, carrying the cervix before it. This is a modification of the first method I have described, but does not seem to be founded on good mechanical principles. The amount of success said to have been obtained both by White and Aveling warrants, however, a full trial of their instruments. 4th. Thomas has suggested the heroic proceeding of opening the abdomen, and dilating the os with an instrument something like a glove-stretcher, but his method has not as yet been adopted in this country, nor is it very likely to be.

When all attempts to reduce the inverted organ fail, and the patient is being run down by hæmorrhage, it becomes necessary to amputate. This may be done quite safely with the *ecraseur*. It was once thought necessary to apply a ligature for some twenty-four or forty-eight hours before amputating, but later experience shows this to be unnecessary. It sometimes happens that the stump is drawn up into the abdomen, and so, if there should be any bleeding vessel, there might be a difficulty in getting at it. To prevent the possibility of this, in the case where I removed the uterus on the table, I passed two wires through the cervix, above the line of amputation, which gave me full command over the stump, and would have enabled me to get at any bleeding vessels there might have been. These wires were afterwards used for bringing the edges of the wound together, which they did very effectually.

DR. MACAN.—Inversion may, I think, be divided into active inversion and passive inversion. Active inversion is when the accident is due to action through partial or irregular uterine contractions. Passive inversion occurs when the whole uterus is relaxed. If, with this latter condition, we also have the placenta attached to the fundus, the occurrence of passive inversion would seem to me to be very readily explained, for

if the intra-abdominal pressure be then increased from any cause—such as the patient bearing down forcibly, raising herself up in the bed, or even coughing or sneezing violently—the pressure on the fundus may force it through the relaxed cervix. Unless, however, the placenta be attached to the fundus there is no broad, flat surface for the intra-abdominal pressure to act on; but if the insertion be fundal, the placenta itself acts as the small end of a wedge to separate the relaxed walls of the uterus from one another, and so to permit the fundus to pass downwards through the cervix. In this way passive inversion can be thoroughly explained without the attendant having applied any pressure over the fundus, or used any traction on the cord. At the same time I think it must be obvious that if the placenta be attached to the fundus traction on the cord is much more likely to lead to inversion than if the placenta were attached to the anterior or posterior wall of the uterus; for in the former case the force is exerted at right angles to the uterine wall, and therefore in the direction in which it has the greatest power to depress it, whereas when the placenta is attached to the anterior or posterior wall, and traction is made on the cord, the force acts parallel to the uterine wall, and so has hardly any, if any, tendency to invert it. It seems too to have been allowed here to-night that partial or irregular uterine contraction may cause inversion. But what does partial contraction mean if not also partial want of contraction in some other part of the uterus—in other words, “paralysis?” For I conceive that to draw a distinction in this case between want of contraction and paralysis is merely disputing about the meaning of words. I am, therefore, inclined to think that paralysis, or, if anyone likes the term better, want of contraction of the placental site, may, when the placenta is attached to the fundus, be the first step in the chain of events which ends in inversion. If we now pass on to consider the mechanism of inversion of the uterus when caused by a fibrous tumour embedded in its walls, I think the same argument holds good with regard to the site of the tumour as we found true as to the site of the placenta; for if the uterus tends to expel any foreign body that occupies its cavity through the cervix, it is plain that the force then exerted will act at right angles to the uterine wall when the tumour is attached to the fundus, and therefore tend to invert it, whereas when the tumour grows from either the anterior or posterior wall the force that is constantly exerted to expel the tumour through the cervix acts parallel, or nearly parallel, to its point of attachment, and has, therefore, hardly any tendency to cause inversion. Even when inverted into the fundus the tumour will not cause inversion unless it be sessile; for if the attachment to the fundus be very thin the action of the uterus in endeavouring to expel the tumour through the cervix will draw out this thin attachment and form a pedicle, and the tumour will become a polypus, and the uterus itself escape inversion. Nor, though

my experience of the accident is very limited, can I agree with Dr. Atthill that the symptoms are seldom marked by any special feature. In the first case I saw the woman had had most violent *post partum* hæmorrhage, and, as she herself said, the doctor that was called in found the womb "outside, lying on the bed." In the other case, which I had the honour of bringing before this Society, in May, 1877, the woman had suffered for years from most violent menorrhagia, which, on more than one occasion, had seriously threatened her life. This latter case corresponds almost exactly with the one Dr. Atthill has now brought forward. I first removed the tumour from the fundus uteri with the ecraseur, and then, in order to prevent hæmorrhage during the subsequent endeavours to replace the uterus, brought the edges of the womb together with silk sutures. Having failed in all my attempts to reduce the inversion, I removed the fundus, and, in order to prevent hæmorrhage either primary or secondary, and to obtain immediate closure of the peritoneal cavity, I brought the two cut edges of the stump of the uterus together with silk sutures. This was, as far as I am aware, the first time this had been done, and was, I believe, original. I am, therefore, very glad to find the method has been adopted by Dr. Atthill. I also suggested that, in cases where the inverted portion was so short as to make it likely that it would at once become retracted through the cervix after the fundus was removed, before this was done, a strong silk or wire ligature should be passed through the cervix, above the point at which it was proposed to remove the fundus, in order to prevent this portion retracting into the peritoneum. This suggestion was, I believe, also original, and has been put into practice, and found useful, by Dr. Atthill and other operators; and I have now no doubt about the truth of the opinion I then expressed—viz., that the removal of the uterus by means of the ecraseur, and the subsequent closure of the opening made into the peritoneum with sutures, would in time entirely supersede the more painful and dangerous operation of removal by the ligature.

DR. McCLINTOCK.—The observations of Dr. Kidd and Dr. Macan as to the causation of inversion of the uterus are so exhaustive that little is left for me to say on that point. I think Dr. Atthill has advanced us considerably towards the solution of this difficulty. He has brought before us two facts of constant occurrence bearing directly upon the question under consideration. One of these is the rarity with which the placenta is found attached to the fundus of the uterus. In all cases where he had to introduce the hand he found the placenta attached to the sides or body of the organ, and only partially encroaching on the fundus, which coincides with my own experience; while, on the other hand, in nearly all the cases where the uterus had been inverted the placenta adhered more or less to the fundus. This constancy would seem to indicate in some degree the relation of cause and effect. He has also

prominently stated that in nearly all cases where inversion of the uterus has been the consequence of a tumour, this tumour has been sessile and not pedunculated, and has sprung from the fundus of the uterus. Upon these facts he has forcibly argued in favour of the production of inversion by the circular contraction of the upper part of the body of the organ. This mode was insisted on by Cross, of Norwich, in one of the best essays on the subject of inversion in the English language. The only cases of inversion, as a result of a fibrous tumour, that ever came under my observation are these of which I now show engravings. One sketch represents a preparation in the Museum of the College of Surgeons here, in which the uterus was completely inverted by a tumour growing from the fundus. It was a sessile tumour. The other plate represents the one I myself removed, and which is fully described in my "Clinical Memoirs on Diseases of Women." I believe that in the majority of cases where inversion occurs after delivery, active contractions of the uterus have been going on. But that the uterus may be inverted when in a state of relaxation cannot be denied, if we are to accept the testimony of competent observers. Dr. Atthill's experience furnishes five cases of inversion, and in three of them the inversion was not puerperal, but resulted from a tumour growing at the fundus of the uterus. Grounding his opinion on these facts, he rather impugns the accuracy of Barnes' observation that, in "the large majority of cases inversion of the uterus takes place in childbed." But I think Barnes' statement is strictly correct, and that Dr. Atthill's experience is quite exceptional. Out of twenty-one cases of inversion of the uterus in this city, occurring in the practice of Dr. Clarke, Drs. Charles Johnson, George Johnston, Dr. Atthill, Dr. Macan, Dr. Kidd, and myself, there were only four in which the inversion was the result of a tumour. Still Dr. Atthill's observation is important, because it tends to dispel from the minds of practitioners the idea that inversion can only occur as a consequence of childbed. Barnes, Hewitt, West, and most other English writers strongly condemn extirpation of the uterus, which they look on as a sort of *dernier ressort*, humiliating to the doctor, unsexing the woman, and full of danger. West says that out of fifty cases this operation failed of its object in two, and was accomplished in the remaining forty-eight, of whom twelve died, or one in four; the means used having been ligature or excision, or both combined. I am happy to say that our experience in this city is very much at variance with the above results. I can make out thirteen cases, and no more, in which extirpation for inverted uterus was performed here, and in every instance with complete success. In a large proportion of them amputation was performed by the *ecraseur*, and bringing the edges of the womb together by means of proper ligatures. The operation appears to be very successful, and I do not see why, if a woman be passed the age of childbirth, we need have any hesitation

about resorting to it, when its safety is thus established, and after a fair trial of taxis. I do not see that it unsexes a woman, any more than a sterile woman can be said to be unsexed. The method of reduction of the tumour is not by any means free from danger, and many patients have died from the effects of attempts at reposition of the uterus. I therefore think the operation in question is entitled to a higher place than it has hitherto held.

DR. MORE MADDEN.—Allow me to raise my voice in favour of the old view, which has been apparently ignored in the discussion on Dr. Atthill's interesting paper—viz., that the chief cause of inversion of the uterus is malpractice by undue traction on the cord, the placenta being adherent to the fundus uteri. The discussion seems to show that obstetric opinion has now gone round very much in the opposite direction. Into the physiological theories which have been so ably put forward this evening I shall not venture to enter. But, as a matter of practical interest, I think it important that we should rest on more assured grounds before we reject the older view as to the ordinary cause of inversion of the uterus. If it comes to be admitted that traction on the funis has very little influence on the production of this accident, one great reason for non-traction of the cord will be done away with, and we shall not only meet with inversion of the uterus more frequently, but also with another serious complication—namely, *post partum* hæmorrhage. When I filled the office of Assistant-Physician to the Rotunda Hospital, I published a paper on acute inversion of the uterus. At that time nearly 200,000 cases of labour had taken place in that hospital, where one of the primary canons of midwifery had always been non-traction of the funis in order to prevent the possibility of this accident. And to this precaution was, I believe, mainly due the very remarkable fact that in all these 200,000 cases only one instance of inversion of the uterus had ever taken place in that institution. In private practice I have seen only one case of acute inversion of the uterus, and in this the placenta was attached to the fundus. The nurse who had conducted the labour certainly asserted that she did not make any traction on the cord. Be this as it may, however, I succeeded in restoring the displaced organ. With regard to the difficulty of returning an inverted uterus it should not be forgotten that Baudelocque records a case in which the dislocation was reduced by nature, after eight years, without any assistance from our art. There is no question, however, that where the case has been of long standing the operation becomes not only difficult, but, as I have myself found in one case impossible, and hence the great need for care in its prevention.

THE PRESIDENT.—I think that the term acute, as applied to inversion of the uterus, is objectionable, because it confounds our ideas of the terms acute and chronic, as applied to other affections. However, as the

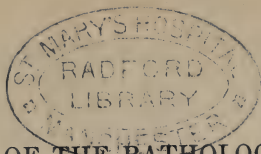
term is in general use, we must adhere to it for the present. I myself have never seen but one case of what may be termed acute inversion, although I have seen a great many cases of labour. And here may I be permitted to differ from Dr. Madden, whose opinion is that acute inversion is most frequently produced by violent traction of the funis. I think that in most cases nature has provided against danger from that cause, as the funis itself generally gives way rather than the uterus yield. It must be acknowledged that there must be a multiplicity of causes to produce acute inversion. In the first place, there must be a depression of the fundus; and, in my opinion, Dr. Barnes' description of the different subsequent stages is very accurate. Dr. Kidd, in opening the discussion this evening, entered into some physiological explanations of the structure of the uterus, and of the action of its muscular fibres; and, in my opinion, his description of the uterine contractions after labour is accurate. And here I may be permitted first to add one additional remark, and to mention one *post partum* phenomenon with which we are familiar. I allude to the fact that if we place one hand on the uterus after labour, and endeavour to make compression either with the object of expelling the placenta, or, after its expulsion, to keep up permanent contraction, we very frequently feel vertical ridges extending along the surface of the uterus, which so simulate tumours that, were we not aware of this phenomenon, we might be likely to fall into a mistake about them, but they soon disappear. I think that the definition which Barnes has given as to the limitation of the terms acute and chronic is about as reasonable as can be desired, and is founded upon the physiological change which takes place in the uterus after the expulsion of its contents—viz., he says that acute inversion ceases when the involution of the uterus is complete, and it then becomes chronic inversion. I mentioned that I had seen but one case of what is termed acute inversion, and I think that it deserves to be recorded. It occurred about two years since, and I was brought by my friend, Dr. Wade, to see it in consultation with him. The woman was confined of a female child after an easy labour. This was her third confinement, and the others had been easy, and she never had hæmorrhage, or any bad symptoms. When I saw her, which was on the third day after delivery, she was in a state of alarm, and I found the whole uterus and the vaginal walls protruding from the vulva. There was no hæmorrhage whatever, and I replaced it without any difficulty, having emptied the bladder previously by pushing up the uterus with my hand, and keeping steady pressure applied. She stated that the nurse who attended her used a good deal of pressure to remove the placenta, but that she did not use any violence in extracting the funis. She complained at the time of a good deal of pain, but the nurse did not mind, and continued the pressure. From this until the third day she suffered from very strong after-pains, and

the nurse gave her a large dose of medicine, and on sitting down on the chamber the whole of her womb, to use her own expression, passed into the chamber. She was much alarmed, and sent, as I have said, for Dr. Wade, who summoned me to aid him. The case is a very interesting one, and bears out, I think, the theory which has been offered in explanation of its occurrence, and it is very probable that the severe pains which she experienced arose from the fact of the gradual contractions of the uterus upon the fundus, which was being inverted, and finally complete inversion occurred. Dr. Atthill appears to think, as far as I can follow him, that in cases of acute inversion the placenta was situated at the fundus; the experience of those who have spoken appears not to coincide with his. He also states that in chronic inversion the growth of a sessile tumour on the fundus is the most frequent cause. Well, I think that in most of the cases that have been recorded the growth of a tumour brought the cause, but the case was originally acute, and in the course of time became one of chronic inversion; but, as in his and other cases recorded, no doubt the growth of the tumour from the fundus becomes the cause of the intraversion taking place. There is no doubt that, in the latter case, the tissue of the uterus may undergo very considerable alteration, and become softened, and thus the uterus become more easily capable of displacement. With regard to the operation of replacing the inverted uterus, I think that it has been discussed with advantage. The only thing that I can add is that the attempts at replacement have been more successful in the hands of our English brethren than in ours, and we have not such results to record as are recorded by Dr. Tyler Smith and others.

DR. ATTHILL (in reply).—I shall not allude to the treatment of inversion of the uterus because, in a paper which I read before the British Medical Association in Cork, I dealt with the question of treatment at considerable length. It has been, at all events, admitted to-night that the operation of amputation of the uterus is safe if properly conducted. I think Dr. Madden and Dr. Macan have fallen into the same error respecting my views as to the dragging of the funis. In my paper I say—“If my theory be correct, and that the funis be dragged at, the placenta being attached centrally, inversion may be accelerated,” but it is not the cause of the inversion. Dr. M’Clintock laid great stress on the fact that of twenty cases of inversion, recorded as having happened in Dublin, only four were the result of the presence of a tumour. I take exception to those statistics. The great majority of those cases occurred long ago. They occurred at a time when nothing was known about gynaecology; and probably the only cases of inversion that were recognised were those that occurred after delivery. If in Dr. Clarke’s time, inversion occurred, caused by the attachment of a tumour, it most likely would have been overlooked. That may explain the supposed infrequency of the occurrence

from any cause save labour. I do not say that my cases should counter-balance the authority of such a large number of observers, still I think it possible that the old observers may have recognised one class of cases only, and that those occurring from the presence of a tumour are more frequent than is supposed. Dr. Macan, in speaking of irregular contraction of the uterus, says—"That irregular action *pre-supposes* partial paralysis." Now I protest against that theory altogether. Irregular action merely means excessive action—abnormal action if you like—of one part of the uterus, while the other part lies dormant. It is like a cramp affecting the muscles of the calf. The other fibres are not paralysed at all. They are only in a quiescent state. If you had paralysis of the fundus and irregular action elsewhere, the irregular action would force the fundus upwards and not downwards. There is no such thing known as irregular action of the uterus forcing the fundus downwards. Last week a case occurred in the Rotunda Hospital in which the uterus was easily felt through the thin abdominal walls of a patient just delivered, and I distinctly made out a tumour on its surface as large as an orange. I thought it was a sub-peritoneal fibroid, but in five minutes it disappeared. It was simply an irregular contraction of the uterus which had bulged the uterine wall outwards. Such cases occur frequently. Dr. Macan asserts that there may be complete inversion of a flabby uterus so that it can fall down into the os uteri and through it. Such a theory seems plausible, only inversion under such circumstances never occurs. Cases are met with frequently among the half-starved poor of this city, in whom, after the occurrence of *post partum* hæmorrhage, the uterus becomes so relaxed that its outline cannot be made out if you introduced your hand into it, with the view of exciting contraction; it feels like a bladder. Here you have the nearest possible approach to paralysis; but which of us have seen inversion to occur in these cases, and yet such are not infrequent, while paralysis of the uterus is out of the question in all cases where the inversion is the result of the presence of a fibrous tumour. With regard to the last patient, from whom I removed the uterus, it may be interesting to know that I had a letter from Dr. O'Meara, stating that she is in perfect health. She has not menstruated, but she is forty-eight years of age. In the case of the young woman whose uterus I amputated after delivery, menstruation occurs regularly. In both cases there is a considerable stump of the cervix left.

The Society then adjourned.



PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

Cirrhosis of the Lung.—DR. FOOT exhibited an example of cirrhosis of the left lung, taken from one of the Metropolitan Police, aged thirty, who died suddenly of profuse hæmoptysis. The man had been on duty up to 28th Jan., seven days before his death. He was six feet in height, had grown rapidly in early youth, and had been ten years in the band. For the first five years he was in the band he used play the bombardon—a wind instrument, which tries the lungs considerably; for the latter five years he performed on the double bass. He came under Dr. Foot's observation on the 1st of February, at which time he had fever of hectic type, with profuse morning perspirations, dyspnoea, requiring a semi-recumbent position, incessant cough, and copious expectoration, which was opaque, homogeneous, viscid, and in colour dull yellow, with a tinge of green. He had never had hæmoptysis. The physical signs were concentrated on the superior portion of the left lung, and were mainly three—absolute want of expansion, dulness of the densest kind, and multitudinous crackling sounds, such as Dr. Foot was in the habit of comparing to the crackling of a furze bush when on fire, and which some of the class at once said were the best illustration of muco-crepitant râles they had ever met with. This was, no doubt, the rattling sound which Juergensen^a calls *cirrhotic crackling*, and which is difficult to describe, but is like a combination of the noise made by small twigs or holly leaves when burning, and that of an induction current applied to the dry skin. On the night of the 3rd February he suddenly got out of bed, saying he was dying; blood poured from his nose and mouth, he fell on the floor, and died in a few minutes. The body was examined twelve hours after death. Hypostatic congestion was fairly visible on the posterior parts of the body; cadaveric rigidity was strongly marked. The left lung was reduced to about one-third of its size, condensed and indurated in its structure, and united to the costal pleura over its upper two-thirds by dense gristly adhesions, requiring division with the knife inch by inch. On removal from the chest the outer surface bore the impressions of the ribs on the thickened pleural envelope, and its upper third was invested with a cap of thickened pleura fully a quarter of an inch deep, forming a

^a Ziemssen. *Cyclop. Pract. Med.* Vol. IX. 884.

hard cicatricial layer, white and tough, sending gray or whitish bands inwards into the condensed iron-gray structure of the lung, which was airless, pale, and in places deeply pigmented. Many of the bronchial tubes are seen widely stretched, but in this case the bronchiectasis is not remarkably conspicuous, though the fibroid induration and shrinking of the lung, which are the essential characteristics of cirrhosis, are well marked. Dilatation of the bronchial tubes is not an essential element in the disease, but is rather a very frequent accompaniment of it. An unusual feature in this case was the amount of tubercular infiltration which pervades both lungs—the lower half of the left cirrhused lung, and the entire area of the opposite one. In no place is the infiltration collected into cheesy masses of any size; it appears under the form of clusters of soft, dirty, yellow hemp-seed-sized deposits. Beside these more confluent groups of tubercular granulations, there are numerous isolated nodules scattered throughout the lungs. In the midst of the indurated tissue of the left lung are some ulcerated cavities, as to which he had not yet ascertained whether they are bronchiectatic cavities in section, or vomicae formed by the molecular necrosis of a tuberculous cluster. There were in the summit of the right lung two unquestionable vomicae of the ordinary kind, the size of hazel-nuts. The right lung was enlarged and hyperæmic, and Dr. Foot was inclined to consider it as the source of the fatal hæmorrhage. He had failed to find any positive evidence of a single point for the escape of the blood, but he considered it came from the right lung, from its very much greater engorgement, and because there were more traces in the shape of coagula and imbibition of the bronchial membrane on this side than on the left. As to the nomenclature of the pathological condition of this lung, Dr. Foot preferred to call such cases—as Dr. Bastian^a did—cirrhosis of the lung, using the term fibroid induration for the more partial and local forms of the cirrhotic change, and reserving the term cirrhosis for the more extensive and advanced change when it affects either an entire lung, or, at least, one lobe of the organ. It was to be recollected that no sharp lines of demarcation exist between fibroid indurations of the lung (chronic pneumonia of some), cirrhosis, and bronchiectasis, because they are merely different degrees of one and the same pathological condition.—*February 5, 1881.*

Intra-ocular Ossification.—MR. STORY said: This is an example of the not very uncommon formation of true bone in a diseased eyeball. I have no history of the case, but the specimen exhibits the ordinary characteristics of ossification in the chorioidea. According to the description given in Pagenstecher and Genth's Atlas, Plates XVIII. and XIX., bone in the chorioid occurs as an ossification in a structureless homogeneous colloid exudation, which seems to spring from the elastic lamina

^a Syst. Med. Reynolds. Vol. III., p. 809.

of the chorioid, and is unaffected by strong acids or alkalies. This colloid matter exhibits in places a tendency to fibrillation, and the bone corpuscles are observed in lines parallel to this fibrillation. I cannot make out the exact origin of the colloid matter in my slides, but I conjecture it springs from the elastic lamina, as is normally the case. In all other respects my specimens exhibit the same appearances as Pagenstecher's plates, and in addition show numerous unmistakable Haversian canals, which do not seem to have any perfectly regular arrangement—at least I meet with them equally in longitudinal and cross-sections. Ossification in this colloid matter proceeds, I take it, in the same fashion as it does in the formation of those bones which are laid down in membrane, but why this so frequently occurs in the eyeball I cannot explain. The pathological condition is not at all uncommon, but I thought the specimen would be interesting to the Society in connexion with the piece of bone which Mr. Stokes exhibited before Christmas, which was removed from a lumbar abscess, and which gave rise to a good deal of discussion at the time.—*February 5, 1881.*

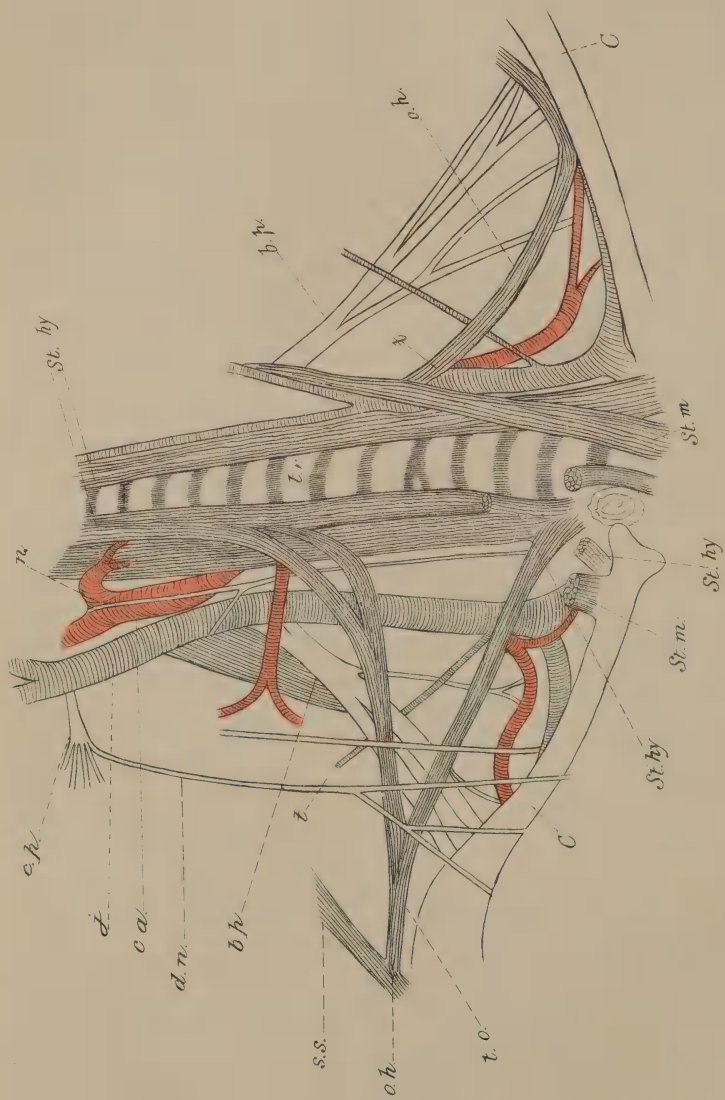
Epithelioma of the Rectum.—DR. BENNETT said: These are the lower end of the intestines and bladder of a patient, aged about forty-five years, who died some short time ago under my care. In the latter part of the autumn he applied at the hospital for relief for diarrhœa and vomiting. At this time his symptoms were so masked that it was thought he was a malingerer. I do not know the details of his case before he came under my care, but when I saw him I found him extremely emaciated. He had been a soldier, and had suffered abroad from intermittent fever. He came home, and obtained a light occupation, and then began to suffer symptoms of uneasiness, which included attacks of diarrhœa and persistent vomiting. The cause of the diarrhœa was not very clear at first. On passing my finger into his bowel, I felt a tumour, having very much the character and feel of an os uteri—that is, there was a large knob-shaped projection, with an opening in the centre, passing down to a position which was reached with some difficulty by the finger. Above was a solid mass, which I could weigh with the finger readily. I had no difficulty in determining what the cause of the diarrhœa was. He had evidently a tumour of some kind in the rectum, high up, and his diarrhœa was a diarrhœa of retention, and not from the ordinary causes. He went on, never having complete obstruction or symptoms that would indicate colotomy. All through the bowels acted, but all through there was more or less of retention; and as the disease progressed, he used to get fits of distension, which relieved themselves by excessive diarrhœa which was fluid and soft; and during the fits of distension he suffered greatly both from pain in the rectum and from vomiting. Towards the latter end of the case, after two months in the

ward, he began to complain of piles, or what he called piles. It was extremely difficult, in his then condition, to make out exactly what the new symptom was. His condition was not one that would enable one to make a satisfactory examination, for the diarrhœa was persistent, and he lay during the greater part of his time in a waterproof sheet, drenched with the diarrhœa, over which he had no control. It was pretty clear that there was inflammatory action going on round the lower end of the rectum, and that abscess had formed, and was tending to a point in the ischio-rectal fossa, but it was not sufficient to warrant the making of an incision. He gradually failed from exhaustion, and died of simple asthenia. When I removed the specimen it showed the characters of a familiar disease—namely, a greatly distended lower end of the sigmoid flexure, and in the rectum just below the colon there was this mass of disease implicating the whole of the intestinal wall, while at the same time the surface both within the constriction and below it was greatly ulcerated. When we came to remove the intestine we found that the whole of the posterior aspect of the intestine, where it lies in the hollow of the sacrum, was involved in a foetid abscess, which communicated with the bowel above the seat of the constriction. The simple reason why the man did not die of perforation of the peritoneum, as so many do, was that the seat of the stricture was so low down, and that the ulceration perforating the bowel opened into the areolar tissue of the pelvis, and not into the peritoneum. The condition of the diseased mass, ulcerating and in places sloughing, with a foetid abscess macerating it externally, made the microscopic examination difficult, but I have no doubt, from the examination I have made, that the disease is an epithelioma of the ordinary type. The bladder was perfectly healthy.—*February 5, 1881.*

TREATMENT OF CHRONIC BRONCHITIS BY CAUTERISATION.

DR. BARTH publishes in *La France Médicale* a remarkable case of recovery under this treatment, which he believes will be successful under similar conditions. A young woman had a chronic bronchitis, the sequel of an acute attack three years before. The usual remedies had been tried in vain, when M. Barth had recourse to the idea of making slight punctures by the thermocautère over the thoracic walls. The whole back was thus covered with small spots of cauterisation. On the next day the dyspnœa was markedly less. Three days afterwards there was a second application, attended by further improvement; there were altogether six cauterisations, and in four weeks the patient was discharged cured.—*Revue Médicale.*

S. W.



TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1880-81.

President—J. WALTON BROWNE, B.A., M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

Third Meeting.

The PRESIDENT in the Chair.

The Morphology of the Omohyoid Muscle. By R. J. ANDERSON, M.A., M.D., M.R.C.S.Eng.; Demonstrator of Anatomy, Queen's College, Belfast.

THE omohyoid muscle occupies a somewhat isolated position, and, as usually seen in man and many vertebrates, attached by one extremity to the bone of the upper extremity and by the other end to the hyoid bone medially or immediately, it has given rise to much discussion.

Professor Henle, in his handbook, states that the anterior belly of the omohyoid is a muscle analogous to the sternohyoid, the posterior to a digitation of the serratus magnus, and the tendon uniting the anterior and posterior belly has the significance of a cervical rib. As the lowest cervical rib is not developed the two muscle bellies pass into one another by means of a tendinous inscription.^a

Professor Gegenbaur from an examination of the different varieties of the muscle was led to a different result. The varieties which seem to point to the conclusion at which Henle arrived are described by Theile, Gruber, Luschka, and other anatomists. The muscle described by the first anatomist as attached to the upper border of the scapula at the place of origin of the normal omohyoid (which was absent in this case) and by its opposite extremity to the first rib has been regarded by succeeding observers as a variety of the subclavius. The instance given by Professor Gruber^b is named subclavius by him, and the cases mentioned by Luschka, Gegenbaur explains in a similar manner, and shows that these cannot be regarded as transitional forms of the omohyoid.^c

The same anatomist points out that tendinous inscriptions have not usually the significance of ribs, and adduces the examples of the biventer

^a Handbuch d. Systemat. Anatomie. Muskellehre. P. 123. 2 Aufl.

^b Neue Anomalien. P. 19.

^c Ueber den Musc. omohyoideus und seine Schlüsselbeinverbindung. Morphologisches Handbuch. 1875. P. 243.

cervicis, complexus and rectus abdominis, where the tendinous intersections indicate simply the remains of the original separation of the muscle into a number of segments corresponding to the body metamers. The presence of a tendinous intersection at the lower extremity of the sternohyoid serves to strengthen the relation, as it shows the intimate connexion of the sternohyoid and omohyoid. The tendinous intersection of the omohyoid being generally well marked, and sometimes of considerable length, is explained by the facts that the muscle here makes a bend and it is in relation with the deep cervical vessels. The varieties met with in the animal series and in man show that the omohyoid belongs to a muscle group which is represented in man by the sternohyoid and sternothyroid. This group is supplied by the cervical nerves coursing in the hypoglossal path. Secondly, in the lower forms the origin of this muscle group extends from the sternum to the clavicle and is continued to the scapula. In crocodiles an episternohyoideus is present, which in the saurians becomes an episternocleidohyoideus, and in platydactylus (Sanders) extends to the claviculo-scapular articulation, whilst it passes quite to the scapula in uromastix (Furbinger). By separation of individual portions of this muscle, muscles arise distinguished as the sternohyoid, sternothyroid, cleidohyoid, and omohyoid—a simple absence of muscle substance giving rise to the varieties observed in man and animals. The most frequent variety is the cleidohyoid, which in man, though frequently present, is not usually developed. This variety occurs once in every 15 subjects according to Hallett.^a In 373 subjects, 8 on both sides, 4 right side only, 5 left side only, majority in middle third, rarely inner third (Turner^b). One in 12 subjects (Gegenbaur^c).

Finally, the fascia uniting the omohyoid to the clavicle is explained by the retrograde metamorphosis of the cleidohyoid. This is shown by the fact that muscular fibres are to be found in the fascia having the same character and course as those of the cleidohyoid; and the fascia is attached to the muscle, and more firmly to the tendon, with which it is intimately connected. This fascia, which extends from the lower inner border of the omohyoid to the clavicle, is not to be regarded as a portion of the deep cervical fascia.

Albrecht^d shows that although the omohyoid is part or is represented by part of a continuous muscle layer in certain vertebrates, yet in a very considerable number of animals the omohyoid is present as a distinct muscle or is absent altogether, and that it is recognisable in the lower classes.

^a Edinburgh Medical and Surgical Journal. 1849.

^b Edinburgh Medical Journal. 1861. P. 982.

^c L. c. P. 247.

^d Beitrag zur Morphologie des M. Omohyoideus.

In mammalia we find it in the lowest forms; in the ornithodelphia it is almost the same as in man. In echidna,^a according to Mivart, the omohyoid does not much deviate from the condition found in the higher mammals (man). In ornithorhyncus^b the omohyoid is present and inserted with the mylohyoid into the hyoid bone; a sternohyoid is present as a distinct muscle. In the marsupials^c the omohyoid presents a scapular origin. The omohyoid is wanting in the edentates (Owen, Humphry,^d Macalister,^e Galton^f). The ungulates have an omohyoid. In the ruminant artiodactyla the origin is somewhat variable from the transverse process of the last cervical, in the giraffe from the transverse process of the third cervical. The pachydermatous artiodactyla (Humphry^g) possess an omohyoid which passes over the anterior edge of the scapula to the upper border to be connected with the radial tubercle of the humerus and the deltoid by fibrous tissue. In the hippopotamus, according to Professor Humphry, the omohyoid passes from the side of the basihyal and the subhyoidean septum to the under surface of the occipito-humeral part of the trapezius, which it joins at an angle and is united to it by an inscription.^h In the horse,ⁱ of the perissodactyla, the omohyoid arises from the coracoid process. The omohyoid is absent in the carnivora, but some possess it, as meles, hyæna, lutra. Of the pinnipedia, Prof. Humphry^h states that this muscle in phoca^h is continuous with the sternohyoid, forming a broad muscle which is inserted into the sternum, the ulnar tubercle of the humerus, and a fascial band between the two, similar—as Albrecht remarks—to the arches of the diaphragm or the tendinous arch in connexion with the adductor magnus. In the descoid placental mammals an omohyoid similar to man has been described in tarsius and cheiromys. Rodents that have a clavicle have an omohyoid. Of the insectivora no erinaceous muscle is present. According to Professor Macalister, in the vespertilionidæ the omohyoid is slender and distinctly biventral. In the phyllostomine bats scarcely a trace of tendinous intersection. In noctulina a band arises from the middle of the clavicle and joins the sternohyoid midway between the origin and insertion; above the point of union is a tendinous intersection.^j In primates the omohyoid is similar to that muscle in man. In troglodytes aubryi an omocleidohyoid is present (Grateolet).

^a Mivart. Trans. Linnæan Soc. Vol. XXV., p. 383.

^b Owen. Anatomy of Vertebrates. Vol. III., p. 5, Fig. 3.

^c Gegenbaur. Op. cit. P. 259.

^d Journ. Anatomy. Vol. IV., p. 29.

^e Trans. Roy. Irish Academy. Vol. XXV., p. 232.

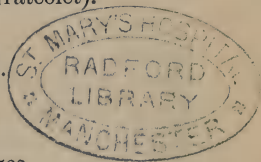
^f Trans. Linnæan Soc. 1870. P. 571. Vol. XXVI., p. 523.

^g Observations in Myology. P. 127.

^h Humphry. Op. cit. P. 126. The foremost fibres run on to the humerus.

ⁱ Owen. Anat. of Vertebrates. Vol. III.

^j Trans. Roy. Soc. Vol. CLXII. 1872. P. 134.



Albrecht^a tabulates the varieties of the omohyoid, thus:—

1. Mammals in which a muscle homologous to the omohyoid is absent—

(1) Edentates, (2) many Carnivora, (3) Pinnipedia, with the exception of phoca, (4) Rodentia without a clavicle, (5) many of the Insectivora, (6) Cheiroptera, with exception of noctulina (*see* Macalister).

2. With the omohyoid resembling closely the omohyoid of man—

(1) Ornithodelphia, (2) Didelphia, (3) Meles, hyæna, lutra (Carnivora), (3) Prosimiæ, (4) Rodentia with clavicles (5) Insectivora erinaceus, (6) Primates, with the exception of troglodytes aubryi.

3. With a musculus coracohyoideus, Equus.

4. M. cleidohyoideus, Noctulina.

5. M. omocleidohyoideus, A. Troglodytes aubryi.

6. M. omobrachio-hyoideus, Sus.

7. M. trapezio-brachio-hyoideus, Hippopotamus.

8. M. sterno-brachio-hyoideus, Phoca.

9. M. spondylo-hyoideus, Ruminantia.

Of these varieties the first five are known to occur in man, and have been recorded by anatomists; of Nos. 6 and 8 examples must be extremely rare. An example differing slightly from these forms I shall give later on. Instances have, however, been given which approach the conditions given above; thus, Hallett and Schwegel show detached bundles of the posterior belly inserted into the sixth cervical transverse process or into the sterno-mastoid and into the fascia of the scalenus (Hallett). Kelch and Grüber have mentioned a muscle which passes between the outer end of the clavicle and the transverse processes of one or several cervical vertebræ. A cervico-costo-humeralis is described by Prof. Gruber, which was inserted into the smaller tuberosity of the humerus by two tendons into the transverse process of the sixth cervical vertebræ and the anterior end of the first rib cartilage. The other varieties referred to by Prof. Gegenbaur, Albrecht gives, and remarks that the examination has been confined to the mammalian and reptilian type. These varieties are the M. episternohyoideus of crocodiles, the episternocleidohyoideus of saurians, and the episternocleido-omohyoideus superficialis of the mastix. The evidence in favour of the omohyoid belonging to the system of the rectus abdominis, amongst the mammalia, Albrecht points out, is based principally on the presence of a cleidohyoid in a noctulina, an omocleidohyoid in a troglodytes aubryi, and the musculus brachio-sternohyoides of phoca. In opposition to this the monotremes present a condition of this muscle resembling closely that of the higher forms. On the other hand, the amphibia, and not the reptilia, are to be looked

^a Albrecht. Loc. cit. P. 11.

upon as morphological allies of the mammalia. In the frog an omohyoid is known to exist, and the same muscle has been described in many other amphibia. Humphry has described the muscle in menobranch and cryptobranch. The condition in uromastix may be looked upon as a union of the omohyoid with episternocleidohyoid.

Albrecht shows that in fishes—of which he takes as examples *spinax*, *acanthias*, *raia clavata*, *acipenser sturio*, and *gadus morrhua*—interbranchial muscles belonging to the internal oblique layer of Humphry are present. Thus, in *spinax* six interbranchial muscles—the last or (sixth) being the muscle extending from the shoulder girdle to the last branchial arch (*omozonio-branchialis*), the latter not necessarily the morphological equivalent of one of the others—are present, united with the mesial layer or layer of the rectus (*omozonio-hyoides*); external interbranchial muscles, belonging to the external oblique layer, are present; in *raia* the external and internal muscles are present; in *acipenser* the former are wanting, and the sixth of the latter (*omozonio-hyoides*) gives evidence of separation into two muscles; in *gadus* all the external and the first two internal branchial muscles are absent, the sixth being divided into two separate muscles; in amphibia the first four interbranchial muscles present variations—they are absent in tailless batrachians; the fifth and sixth have the following arrangements:—the latter being divided into two, one or other or both being persistent. The sixth dorsal interbranchial is present in *siren*, *proteus*, and *menopoma*—absent in *menobranchus*, *cryptobranchus*, *anoura*, and others. The sixth ventral internal interbranchia, with the fifth, is united in one muscle, the omohyoid—the posterior part of which is represented by the sixth, the anterior by the fifth, interbranchial muscle—in *proteus*, *menopoma*, and *amphiuma*, where both muscles join the sternohyoid; in *cryptobranchus*, where the anterior belly joins the sternohyoid; and in the tailless batrachians, where both bellies are free.

The observations of Albrecht, as will be seen, serve to confirm those made by Humphry, as far as the continuation of the internal oblique layer forwards to the neck is concerned, and as the subject requires a reference to the views of the latter anatomist, I shall here summarise them.^a

The internal oblique stratum represented by that muscle in the abdominal wall is continued to the thorax as the external intercostals, and here the ribs are developed in this stratum as well as the sternum and the limb girdles, and is continued into the neck, where the hyoid bone is developed also in this layer. In the abdomen, the internal oblique, the *quadratus lumborum*, *rectus*, and *pyramidalis*; in the thorax, the external intercostals, *levator costarum*, *rectus thoracis*, *rectus thoracis lateralis*, *sternocostalis*; in the neck, the *scaleni*, *rectus capitis lateralis*,

^a Observations in Myology. P. 123.

sternohyoid, sternothyroid, hyoglossus, geniohyoglossus, and the middle and inferior constrictors of the pharynx. To the same stratum may be referred the styloglossus, the stylohyoid, the stylopharyngeus, the digastric and the superior constrictors. The muscles that pass to the shoulder girdle are those which pass above the glenoid cavity belonging to the serratus or *costo-scapular group*, which group is prolonged into the omohyoid and levator anguli scapulæ anteriorly, and those that pass to the girdle below the glenoid cavity, the costo-coracoid group, including the sterno- or costo-scapularis and the subclavius. The nerves to the limb serve to separate the groups in question.

In cryptobranch (p. 11) the internal oblique fibres acquire an antero-posterior direction near the mesial line, and are continued into the deep fibres of the rectus. Anteriorly the omohyoid has a very similar relation to the sternohyoid. If, then, we trace the middle layer forwards, we have as its representatives, attaching the limb to the trunk, the serratus and levator anguli scapulæ posteriorly, the costo-scapular or costo-coracoid (subclavius) attaching the limb to the trunk anteriorly, the nerves to the upper limb separating the anterior (lower) from the posterior (upper) group. The nerves which separate the subclavius from the serratus separate the omohyoid from the same muscle.

The omohyoid and subclavius present many important points of resemblance, and these will be more readily seen if the varieties of the latter muscle be compared with those of the former.

In emys europæa the subclavius arises from the under part of the first costal plate, and is inserted into the suprascapula and the contiguous part of the scapula.^a In the crocodile the epicoraco-humeral muscle, which Professor Rolleston regards as the homologue of the subclavius, arises by two heads—the inner from the visceral surface of the scapula, the outer from the precoracoid and from the prescapular portion of the preglenoid expanse. The inner is intimately connected at its insertion with the pectoralis major, and, together with the tendon of the outer head, occupies a position between the deltoid and pectoralis major. The insertion of the omohyoid corresponds with the origin of the pre-glenoid head, and the fibres of the two muscles are, to some extent, continuous with one another, at least in young specimens.^b In the emu, according to the same anatomist, the epicoraco-humeral muscle arises from the mesial part of the sternum or “rostrum” of the bone, from the coraco-clavicular membrane, and from an irregularly quadrangular pre-glenoid headland constituted by the scapula and coracoid; it is inserted into the humerus above and internal to the deltoid, and superficial to the coraco-brachialis.

In apteryx, according to Professor Owen, a portion of the pectoralis

^a Owen. Anatomy of Vertebrates. Vol. I.

^b Rolleston. Trans. Linnæan Soc. Vol. XXXV., p. 609.

minor, which he called subclavius, arises from the anterior angle of the sternum, and is inserted into the coracoid.^a

In echidna, according to Mivart,^b no pectoralis minor is present; a small muscle arises from the first rib, and is inserted into the coracoid. The subclavius of Owen is inserted into the coracoid in ornithorhynchus. This rectus is inserted into the coracoid at no great distance from the epicoraco-humeral (the homologue of the subclavius of other mammals).

In the wombat of the marsupialia the subclavius arises from the first rib, and is inserted into the outer end of the clavicle, and by means of the fascia covering the supraspinatus into the whole length of the spine of the scapula. It is joined by a fine tendon or thin muscle that arises from the sixth costal cartilage. A fascicle of the rectus abdominis passes into this muscle near its attachment to the rib.^c

In dasypus sexcinctus of the edentates the subclavius arises from the first rib, and is inserted into the whole extent of the upper border of the acromion process by a flat tendon, and becomes continuous with the fascia over the supraspinatus and the head of the humerus. It is split into two portions by the strong coraco-clavicular ligament. In orycteropus capensis the subclavius arises from the manubrium and the first rib, at its junction with the sternum, and in part by a slight prolongation of its fibres from the aponeurosis of the rectus. It is inserted aponeurotically, along the upper border of the acromial half of the clavicle, into the acromion and supraspinatus fascia.^d In chlamydophorus truncatus it arises from the first rib, and is inserted into the coracoid process, acromion, and the acromial end of the clavicle.^e In ai it is inserted into the clavicle and coracoid process.^f The subclavius is absent in manis, myrmecophaga jubata, and some others. A retro-clavicularis is present in chlamydophorus, and arises from the upper surface of the first rib, near the sternal end, and is inserted into the acromion process and supraspinatus fascia and coraco-acromial ligament.^g

In ruminants a sternoscapular muscle arises from the manubrium, and is inserted into the scapula.^h

In the hippopotamus the subclavius is expanded upon the supraspinatus at its insertion, forming a sternocosto-scapularis. In the pig it reaches the radial tubercle of the humerus.^g

In the porcupine the subclavius arises from the costal portion of the first rib, has a slight attachment to the scapular extremity of the clavicle, and is finally inserted into the spine of the scapula, the supraspinous

^a Owen. Op. cit. Vol. II., p. 609.

^b Trans. Linnæan Soc. Vol. XXV., p. 382.

^c Rolleston. Trans. Linnæan Soc. Vol. XXVI.

^d Galton. Trans. Linnæan Soc. Vol. XXVI.

^e Macalister. Trans. Roy. Irish Acad. Vol. XXV.

^f Humphry. Jour. of Anat. Vol. IV.

^g Observations on Myology.

fascia, and by this to the deltoid, and is extended over the supraspinatus to the humerus.^a

In the guinea-pig the subclavius arises from a small surface on the presternal pro-osteon, and from the cartilage of the first rib, exteriorly, to which latter point of origin the epicoracoid has coalesced with the vertebral rib. Some of its fibres are inserted into the coraco-clavicular ligament and some into the clavicle, but it receives fibres also from the clavicle. The muscle is then inserted into the acromion (anterior border), and with the deltoid some fibres become continuous.^b

In the cheiroptera the subclavius arises from the first rib, and is inserted into the clavicle.^c

The following table represents the varieties, with an origin from the first rib, rib and manubrium, and rectus, or precoracoid and scapula. It is inserted into—

- (1) The suprascapula and scapula.
- (2) The humerus.
- (3) The coracoid.
- (4) Outer end of clavicle and spine of scapula.
- (5) Acromion, supraspinatus fascia, and humerus.
- (6) The scapula, with an origin from the sternum.
- (7) Receives fibres from rectus.
- (8) Radial tubercle of humerus.
- (9) Spine of the scapula and humerus.
- (10) Coraco-clavicular ligament, clavicle, and acromion.
- (11) Clavicle only.

Comparing the varieties found in man with these, the subclavius has occasionally an attachment to the clavicle, coraco-clavicular ligament, and coracoid process. It may be inserted into the clavicle, coracoid process, and upper border of the scapula, and may at the latter place be intimately connected with the supraspinatus fascia. A condition, very similar to that of ruminants, was observed by Mr. Wood, and recorded by him many years ago. The subclavius may be absent; of this I have met with two cases in ninety subjects dissected during the present session. Absence of this muscle was observed by Prof. Gruber.

If the varieties of the omohyoid be placed side by side with those of the subclavius, it will be seen that, first, as far as the origin is concerned, there is evidence of a connexion with the rectus. In the case of the former the anterior belly is inseparably united with the ventral muscle in some lower forms, and occurs as a not infrequent variety in man, so that in these the posterior belly must be regarded as a muscle radiating from the rectus, and, in the case of the latter muscle, a variety is pre-

^a Rolleston. Loc. cit.

^b Galton. Loc. cit.

^c Macalister. Trans. Roy. Soc. 1872.

sented in the wombat, where the fibres are (in part) continuous with the rectus. An origin of the omohyoid, on the other hand, from the sternum is not, so far as I know, on record; and an example of a sternoscapular muscle, which, I think, must be regarded as belonging to the sternohyoid set of muscles, I shall give later on. The insertions of the omohyoid and subclavius present, however, many characters which show a definite relationship between these muscles. Each muscle is inserted in some of the animal forms into the clavicle, scapula, coracoid process, and humerus. What in man is a normal attachment of the omohyoid, is an aberrant attachment of the subclavius, and the omohyoid is attached to the under surface of the clavicle in a large percentage of cases. Six cases were recorded in ninety subjects during the present session (1880-81).

I shall now give some varieties of these muscles. Two of the subclavius are recorded with accompanying variation in the attachment of the omohyoid.

The first case is that of a costo-scapular muscle, differing but little from the cases of Theile and Wagner. That it was a true subclavius will be easily seen from the description.

1. In a female subject, aged forty-five, on both sides of the body a muscle arises from the cartilage of the first rib by a tendon one and a half inches in length; this is continued into a round fleshy belly which passes beneath the clavicle, to which it is attached by a firm fascia, over the subclavian and suprascapular arteries and brachial plexus, and is inserted into the upper border of the scapula for one inch, extending forwards from the superior angle. The muscle is supplied by a branch from the fifth and sixth nerves of the brachial plexus. The omohyoid arises from the under-surface of the clavicle for the extent of one inch at the junction of the middle and outer thirds of the bone; it passes upwards and inwards and unites with the sternohyoid. Below the point of union is situated a tendinous inscription in the omohyoid, from the inner extremity of which a fibrous band passes inwards to the sternohyoid, where it is prolonged into a tendinous inscription less marked than that of the omohyoid. From the arch so formed fleshy fibres pass up to the conjoined sternohyoid and omohyoid, filling up the triangular interval by a thin fleshy stratum. The fibrous band, which was one-tenth of an inch broad, has been referred to by Professor Turner in his paper.

2. The second example occurred in a male subject, aged fifty. The trapezius is inserted into the outer two-thirds of the clavicle on each side; on the right side the external jugular vein passes through a foramen in the muscle close to the clavicle, and the supraclavicular nerves pass forwards through the same foramen. The omohyoid is attached to the upper border of the scapula from the superior angle to

the notch, to the ligament over the notch, and to the base of the coracoid process; it is further attached to the outer half of the clavicle. The external jugular vein and supraclavicular nerves pass beneath a tendinous arch close to the clavicle, to which some fibres are attached. The muscle is inserted into the hyoid bone superficial to the sternohyoid. A cleidohyoid muscle arises from the inner third of the clavicle for the extent of one inch, is separate from the sternohyoid in all its extent, and is inserted into the hyoid bone above that muscle. On both sides a supraclavicularis is present, arising from the manubrium beneath the sternomastoid; it is inserted into the clavicle between an anterior and a posterior layer of the sternomastoid. The interest attaching to this case is due to the many irregularities. The individual varieties have been observed by many anatomists. The attachment of the omohyoid superficial to the sternohyoid is the fact which I shall make use of.

3. In a male subject, aged forty-eight, on the left side of the body the omohyoid has the normal origin. Above the middle of the clavicle it divides into two parts; the upper is connected with the anterior belly by means of a tendon, and this belly of the muscle is closely connected with the sternohyoid. The lower division, half an inch broad, is inserted into a more than usually strong tendinous inscription in the sternohyoid. The place of insertion is on the anterior aspect of the muscle. A muscular fasciculus is given by this muscle to the sternothyroid, the outer border of which it joins.

4. Instances are on record where the omohyoid presented a double belly at the anterior and posterior part. In a male subject (left side) this muscle arises from the scapula at the usual place, and is inserted into the hyoid bone. So far the muscle presents no unusual features, but for an extent of three inches extending on both sides of the tendinous inscription the muscle is double; each part resembles a normal omohyoid.

5. The last variety in this connexion to which I shall refer is the case of absence of the anterior belly. This variety is rare, as Professor Macalister did not meet with it once in 600 subjects. The variety occurred in a female subject, in which the omohyoid of the right side presents an anomaly somewhat similar to that recorded by M'Whinnie. A portion of the outer fibres passes over the sternohyoid near its insertion, over the hyoid bone and beneath the mylohyoid, and then enters the geniohyoid. A portion of the sternohyoid crosses beneath this bundle and is continued into the hyoglossus. On the left side of the head and neck the omohyoid arises from the scapula and terminates in a fibrous band in front of the carotid vessels. This divides into two; both pass upwards; the inner is inserted into the os hyoides, the outer is lost in the cervical fascia, with which both are in close connexion.

These varieties point to the fact that the anterior belly of the omohyoid, usually distinct in the case of man, lying side by side with

the sternohyoid near its insertion, and inserted border to border with it, and so far may be understood as obtaining its substance, not from the rectus, but from the prolongation of the lateral internal oblique layer, as distinguished from the mesial part; yet the variety given under No. 2 shows that the anterior belly may have an intimate connexion with the superficial part and not the external part. And No. 5 shows, as, indeed, other varieties, that the anterior belly may be connected with the posterior part of the prolonged rectus. Variety No. 4 is another illustration bearing on this point—a portion of the omohyoid is inserted into the anterior part of the tendinous intersection of the sternohyoid. Unless a portion of the anterior belly be considered as absent in this case, we must regard a part of the sternohyoid above the intersection as portion of the omohyoid that has coalesced with the sternohyoid, but a third assumption is possible—namely, that the fibres of continuation are to be sought in the part below the intersection. In case, then, these varieties point to the fact stated by Prof. Henle that the anterior belly corresponds to the sternohyoid, and should be regarded as the analogue, or, to go a step further, as a differentiated part of the sternohyoid mass, this differentiation can be easily accounted for. The separation of the cleidohyoid, as given in No. 2, from the more deeply placed sternohyoid, can be explained on the same principle as the separation of muscles into layers in the limbs and elsewhere, and such an interpretation is rendered almost certain by the fasciculated varieties met with in connexion with the omohyoid. The division of the muscle given above was as perfect as the ordinary separation that exists between the sternohyoid and the omohyoid; and the muscle shreds that so frequently exist between the omohyoid and the sternohyoid is additional evidence bearing on this point. On the whole, therefore, the varieties met with point to the fact that the anterior belly of the omohyoid should be regarded as a portion of the sternohyoid (at least in man), and that the tendinous intersection of the central mass represents the point at or below which the separation takes place. That the breadth of the tendon of the omohyoid to some extent depends upon the extent of the original connexion of the posterior belly with the mesial mass. Its length is probably due to a variety of circumstances—the extent and firmness of the fascia investing it, the length of the muscle, and the angle of junction. The first and last because they affect its action, and the second, conjoined with either of the former, would serve to increase its length. The absence of an anterior belly is attributable, without doubt, to a solution of the connexion with the mesial mass, or to its original weakness.^a

^a Dr. Whitla, of Belfast, has told me of a case where the anterior belly was displaced by a small round tendon on both sides. It occurred in a person who had worn a trachea cannula for forty-three years.

So far, then, as the omohyoid can be regarded as composed of a sternohyoid portion and a recto-scapular portion, the posterior belly is similar in its anterior connexions with the portion of the subclavius met with in *phascolomys* and *orycteropus*, which in these creatures is connected with the rectus or its expansion; and the similarity in the attachments of the muscles posteriorly I have already mentioned. The nervous supply of the two muscles is different, and is apparently an argument against the homology of the muscles, if there were no other; but the fact that the omohyoid is intimately connected with muscles supplied by the nerves in the tract of the *descendens noni*, and other instances, such as that of the *levator anguli scapulæ*, and the *serratus* where the nervous supply is different, at least frequently—the former muscle, no doubt, sometimes receives a branch from the fifth; but a branch from the third is a very constant nerve to this muscle—furnish reasons for this difference in nervous supply.

The *supraclavicularis*, originally described by Professor Gruber, has an attachment at the inner and outer end of the clavicle. Tendinous at each extremity and fleshy at the middle, it has been considered by the anatomist who first described it as a tensor of the fascia, and by him regarded as the representative of the fibrous band which one sees occasionally above the clavicle giving attachment to the trapezius. The muscle occurred twice during the present session in the anatomical rooms, and in one case corresponded exactly with the description given by Gruber. This muscle was supplied in the case to which I refer by the *descendens noni*. A muscle such as this supplied by the *descendens noni* seems to show that it does not correspond to the fibrous band situated above the clavicle, but must be regarded as a muscle of a deeper layer—namely, of the layer to which the depressors of the hyoid bone belong. It would more appropriately be referred to the fibrous band mentioned in one of the notes given above. Such a muscle, then, might be regarded as a portion of the internal oblique layer which lost its attachment to the sternohyoid band and acquired an external attachment to the clavicle at a place where a *cleidohyoid* muscle is sometimes found. That the muscle must be regarded in this light is, I think, shown by the following variety, which, as far as I know, is new:—

In a female subject, aged seventy-eight, on the left side of the head and neck the omohyoid is attached to the outer third of the clavicle for one inch, and is prolonged to the upper border of the scapula where it is attached to the ligament over the notch, as also to the bone. Arising in this way the omohyoid passes it upwards, and is inserted into the hyoid bone. A faint line which extended transversely across the muscle indicated the line of division of the muscle into two parts. The subclavius on this side has a slight attachment to the clavicle externally (half an inch). It is, however, attached by a slip to the coracoid process,

and by a band to the upper border to the scapula beneath the omohyoid. The arrangement resembles that of Böhmer's case, cited by Professor Macalister.

On the right side a sternoscapular muscle arises from the posterior surface of the sternum in this way:—From the anterior surface of the tendon of origin of the sternothyroid tendinous fibres are prolonged upwards and outwards. These are reinforced by fibres arising from the anterior surface of the sternothyroid, and which have a transverse direction above the tendon and below the tendinous intersection of the same muscle. From the band so formed external to the sternothyroid a muscular belly arises, which passes outwards above the clavicle over the subclavian artery and brachial plexus, and terminates in a tendon two inches and a half long, which is inserted into the upper border of the scapula and ligament over the notch for the extent of one inch. A small band passes down to the outer third of the clavicle, and a portion of the fibres is continued into the supraspinatus fascia. The breadth of the tendon of origin is one inch and a quarter; the breadth of the muscle about four lines. The omohyoid has a slight origin from the upper border of the scapula, but is attached to the upper border of the outer tendon of the sternoscapular muscle for its whole length. The muscle passes upwards and inwards to the hyoid bone, and is connected with that muscle so closely, three inches below its insertion, that it cannot be easily separated. Below the point of union a muscular fasciculus from the omohyoid joins the sternohyoid. A tendinous inscription is present above the middle of the omohyoid, oblique in direction, and very faint. The sternoscapular muscle is supplied by a branch of the descendens noni which enters the muscle near its inner tendon. The sternohyoid of the right side has only a clavicular origin, so that, in reality, it is not properly designated by this name. On the left side the muscle has both a clavicular and sternocostal attachment.

This muscle has much in common with the suprascapularis proprius and the retro-clavicularis, and I think these two muscles may be considered varieties of the foregoing. Dr. Macalister has already stated as his opinion that the muscle described by Mr. Lawson Tait is to be regarded as a variety of the suprascapularis. To the same set the sternohumeral muscle of Gruber may with justice be referred. The position of the supraclavicular nerves in this case seems at first sight to show that the sternoclavicular muscle has a significance different from the supraclavicularis, for in Prof. Gruber's example and the two instances referred to, these nerves passed beneath, whilst the same nerves passed in front of the sternoscapularis; but this objection loses its importance when we consider that the descending nerves of the cervical plexus sometimes pierce the clavicular origin of the omohyoid or even the clavicle, or may pass under a tendinous arch into which the latter

muscle is inserted.^a The supraclavicular nerves in this example passed over the omohyoid and the sternoscapular muscle. The relations of the origin to the sternothyroid and the insertion of the omohyoid, together with the fact that the muscle has the same nervous supply, show that it belongs to the lateral ventral muscle. The connexion with the posterior part of the omohyoid seems to show that these muscles are to be regarded as parts of the same lateral muscle band; and the connexion of the sternoscapularis with the sternum internally, the clavicle and scapula externally, shows that it is a serial homologue of the subclavius. The posterior belly of the omohyoid must, I think, be regarded as homologous with the subclavius. The reasons for this conclusion may be briefly stated thus:—

(1) The origin of the subclavius is closely connected with the rectus in some animals. Wombat, *orycteropus*. The posterior belly of the omohyoid passes into the mesial layer prolonged from the rectus, as a permanent condition in *cryptobranch*.

(2) The nerves of the limb separate equally the subclavius and costocoracoids equally with the omohyoid from the serratus or costo-scapular group.

(3) The aberrant supraclavicular muscles present an origin and insertion similar to the subclavius, and resemble closely the omohyoid in their attachments, relations, and nervous supply.

(4) The extensive clavicular attachment of the omohyoid in certain of the animal series can be explained as a part of the attachment of the recto-clavicular muscle—the inner surface, in some cases, being part of the rectus prolongation.

(5) The omohyoid is bound down to the clavicle so closely in many cases as to completely obliterate the subclavian triangle—in 13 out of 373 subjects (Turner, *loc. cit.*); and the same arrangement occurs when the subclavius takes origin from the scapula, as in case given above.

TREPHINING THE MASTOID PROCESS.

SCHMALTZ (*Dtsch. med. Woch.*, Dec. 4, 1880) gives an historical *résumé* of the operation of trephining the mastoid process, and cites in detail his own experience in ten cases. He concludes by laying stress upon the value of the thermometer in these cases, and gives his reasons for prefacing the operation in certain cases by Wilde's incision, keeping the wound open and waiting to see if the trephine becomes necessary. He thinks that in many cases the removal of the cortex of the mastoid is sufficient. In sclerosis of the mastoid, found after trephining, he would employ the galvanic cautery.—*N. Y. Med. Jour.*, April, 1881.

^a Krause. *Die Nervenvarietäten*. During the present session I have recorded three instances where a single branch of the descending nerves perforated the clavicle.



SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
June 18, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	333,401	778	631	—	—	8	1	4	31	5	24·3
Belfast, -	174,412	596	361	1	—	1	1	13	19	6	26·0
Cork, -	78,642	172	128	—	3	2	—	3	17	2	21·2
Limerick, -	39,353	74	58	—	—	3	—	4	2	—	19·3
Derry, -	25,242	58	53	—	—	—	1	—	—	1	26·0
Waterford, -	23,349	47	42	—	—	—	—	—	8	2	23·6
Galway, -	15,597	34	25	—	—	—	—	—	—	—	21·2
Sligo, -	10,670	27	17	—	—	—	—	—	—	2	20·6

Remarks.

The death-rates contained in the foregoing table and those which follow are calculated according to the Census of 1871. In future they will be calculated on the Census of 1881.

The following notes on the results of the Census of 1881 are taken from the Registrar-General's "Weekly Return of Births and Deaths in Dublin and in Fifteen of the Principal Urban Sanitary Districts in Ireland" for the week ending June 18, 1881:—

"In 1871 the total population of the Dublin registration district and the fifteen provincial urban sanitary districts embraced in these returns was 794,732; from the unrevised summaries furnished by the enumerators it appears that at the date of the recent Census the inhabitants of these localities amounted to 844,793, being an increase of 50,061, or 6·3 per cent. The increase in the Dublin registration district was 16,105, or 4·8 per cent. (1·7 per cent. in the city and 13·6 per cent. in the suburbs), and the net increase in the provincial urban districts 33,956, or 7·4 per cent., the population having increased in Dublin city and each of its suburban districts, and in Belfast, Londonderry, Newry,

Dundalk, Sligo, and Clonmel, and decreased in Cork, Limerick, Waterford, Galway, Drogheda, Kilkenny, Wexford, Lurgan, and Queenstown. The greatest proportional increase in any of the fifteen provincial urban districts was in Belfast 33,259, or 19·1 per cent., and the greatest proportional decline was in Drogheda—namely, 994, or 7·4 per cent. The increase in Sligo was only 0·9 per cent., and the decrease in Cork and Wexford only 0·4 and 0·2 per cent. respectively.”

In the four weeks ending June 18 the death-rate was high in Belfast and Derry, rather high in Dublin and Waterford, moderate or low in the remaining towns included in the table. The death-rate was 19·7 per 1,000 of the population annually in twenty large English towns (including London, in which it was 19·4), 20·5 in Glasgow, and 21·8 in Edinburgh. It was 23·8 per 1,000 in the sixteen chief town districts of Ireland. When the deaths of persons admitted into public institutions from localities outside the district are omitted the rate of mortality falls to 23·5 in the Dublin registration district and to 25·0 within the municipal boundary of Dublin. Zymotic affections were again neither very rife nor fatal in Dublin. They caused 71 deaths, being not one-half the average number (147·3) in the corresponding period of the previous ten years. Fever was the most fatal disease of the class. Of the 31 deaths attributed to “fever,” 22 were returned as due to typhus, 4 as due to enteric, and no fewer than 7 as due to “simple fever.” Fever was also prevalent and fatal in Waterford, Cork, and Belfast. Of the 17 fever deaths in Cork, 15 were caused by typhus. In Belfast, on the contrary, typhoid or enteric fever seemed to be the more fatal—12 out of the 19 deaths being referred to this form of continued fever. Typhus caused 7 out of the 8 deaths from fever in Waterford. Whooping-cough is epidemic in Belfast, Cork, and Limerick. Only 1 death from smallpox was registered in any of the towns—namely, in Belfast in the first week of the period. The advance of summer has checked the epidemic of smallpox in London. The deaths in the four weeks were 315, compared with 330, 289, 202, and 205 respectively in the four preceding periods. Favourable weather exercised a beneficial effect on the public health in Dublin so far as diseases of the organs of respiration are concerned. The deaths were only 100, compared with a ten-years’ average of 122·7. They included 67 from bronchitis (average=85·1) and 22 from pneumonia (average=24·6). Phthisis caused 97 deaths in the four weeks. On Saturday, June 18, the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals were as follow—smallpox 0, measles 0, scarlet fever 8, typhus 47, typhoid 11, and pneumonia 7. No return having been received from the Fever Hospital of the South Dublin Union at Kilmainham the above figures do not give a correct estimate of the total number of typhus patients under treatment in the Dublin hospitals.

Appended is a table showing the chief facts relating to the population in the Dublin registration district and the principal urban sanitary districts of Ireland in 1881.

TABLE showing the Population, in 1871 and 1881, in the Dublin Registration District and in the undermentioned 15 Urban Sanitary Districts, with Increase or Decrease in each between 1871 and 1881. The Population for 1881 is given subject to revision.

Towns and Districts	Population		Increase or Decrease between 1871 and 1881		
	1871	1881 (Unrevised numbers)	Increase	Decrease	Rate per cent.
Total of 16 Town Districts, -	794,732	844,793	50,061	—	6·3
DUBLIN REGISTRATION DISTRICT.					
Total, - - - -	333,401	349,506	16,105	—	4·8
Registrars' Districts :					
City, - - - -	^a 245,364	249,486	4,122	—	1·7
Clontarf, &c., No. 1, - - -	3,330	4,072	742	—	22·3
Coolock and Drumcondra, No. 1, -	5,515	6,615	1,100	—	19·9
Finglas and Glasnevin, part of, -	4,304	4,950	646	—	15·0
Palmerston, part of, - - -	5,586	6,040	454	—	8·1
Rathmines, ^b - - - -	21,373	25,198	3,825	—	17·9
Donnybrook, - - - -	22,208	24,540	2,332	—	10·5
Blackrock, No. 1, - - -	7,204	7,996	792	—	11·0
Kingstown, 1 and 2, ^b - - -	18,517	20,609	2,092	—	11·3
URBAN SANITARY DISTRICTS.					
Belfast, - - - -	174,412	207,671	33,259	—	19·1
Cork, - - - -	78,642	78,361	—	281	0·4
Limerick, - - - -	39,353	38,600	—	753	1·9
Londonderry, - - - -	25,242	28,947	3,705	—	14·7
Waterford, - - - -	23,349	22,401	—	948	4·1
Galway, - - - -	15,597	14,621	—	976	6·3
Drogheda, - - - -	13,510	12,516	—	994	7·4
Newry, - - - -	13,364	14,782	1,418	—	10·6
Kilkenny, - - - -	12,710	12,182	—	528	4·2
Wexford, - - - -	12,077	12,055	—	22	0·2
Dundalk, - - - -	11,327	11,946	619	—	5·5
Sligo, - - - -	10,670	10,764	94	—	0·9
Lurgan, - - - -	10,632	10,184	—	448	4·2
Queenstown, - - - -	10,334	9,738	—	596	5·8
Clonmel, - - - -	10,112	10,519	407	—	4·0

^a This population is 962 less than the population of the city proper in 1871, that number having been distributed amongst the extra municipal districts, to allow for persons admitted into city institutions from these localities.

^b The boundaries of the Rathmines and Kingstown townships were enlarged during the decade, so that these districts more nearly correspond with the urban districts than they did in 1871.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
July 16, 1881.*

Towns	Population in 1881 (Unre- vised)	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	348,525	886	568	—	1	5	1	5	23	10	21·2
Belfast, -	207,671	563	337	3	1	1	1	3	6	9	21·1
Cork, -	78,361	171	145	—	2	—	—	2	14	2	24·1
Limerick, -	38,600	75	74	—	—	2	—	—	2	—	24·9
Derry, -	28,947	86	50	—	—	2	—	—	1	1	22·5
Waterford, -	22,401	51	45	—	1	—	—	—	7	—	26·1
Galway, -	14,621	19	33	—	—	—	—	—	2	—	29·3
Sligo, -	10,764	21	4	—	—	—	—	—	1	—	4·8

Remarks.

The death-rates contained in this table and those which follow are for the first time calculated upon the unrevised results of the Census of 1881. In the four weeks ending July 16 the mortality was generally moderate, except in Galway, Waterford, and Limerick, in which towns it was high for the time of year. It was at the rate of 20·5 per 1,000 of the population annually in twenty large English towns (including London, in which it was at the rate of 21·1 per 1,000), 21·4 in the sixteen chief town districts of Ireland, 20·4 in Glasgow, and 18·3 in Edinburgh. Omitting the deaths of persons admitted into public institutions from localities outside the registration district, the death-rate represented by the registered deaths was 20·5 in the Dublin registration district and 22·0 within the municipal boundary of Dublin. The deaths from zymotic affections in the Irish metropolis were only 64, or less than one-half the average number in the previous ten years—namely, 136·3. Fever was again the most fatal disease of this class, and it appears to be widely diffused at present throughout the town populations of Ireland. Of the 23 deaths from fever in Dublin, 17 were referred to typhus and 6 to typhoid. Smallpox caused 3 deaths in Belfast and 262 deaths in London during the four weeks. Affections of the organs of respiration were credited with 93 deaths in Dublin—a number slightly above the average of former years, viz., 91·4. Bronchitis proved fatal in 62

instances, compared with an average of 64·5. Pneumonia with 23 deaths was considerably more fatal than usual—the average being 16·7 fatal cases. Under the influence of the exceptional heat in London, the deaths referred to diarrhœa, which had been 44, 72, and 135 in the three preceding weeks, further rose to 292 in the last week of the period. This number exceeded the corrected weekly average by 116.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of June, 1881.*

Mean Height of Barometer,	-	-	-	29·990 inches.
Maximal Height of Barometer (on 9th at 9 a.m.),	-	-	-	30·332 „
Minimal Height of Barometer (on 21st at 9 a.m.),	-	-	-	29·237 „
Mean Dry-bulb Temperature,	-	-	-	56·6°.
Mean Wet-bulb Temperature,	-	-	-	52·5°.
Mean Dew-point Temperature,	-	-	-	48·8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·345 inch.
Mean Humidity,	-	-	-	75·9 per cent.
Highest Temperature in Shade (on 2nd),	-	-	-	74·8°.
Lowest Temperature in Shade (on 8th),	-	-	-	36·8°.
Lowest Temperature on Grass (Radiation) (on 8th),	-	-	-	34·1°.
Mean Amount of Cloud,	-	-	-	62·4 per cent.
Rainfall (on 21 days),	-	-	-	2·666 inches.
General Directions of Wind,	-	-	-	S.W. & W.N.W.

Remarks.

A very showery month. The first four days were warm and summerlike, and on the 2nd the thermometer rose to 74·8° in the shade even in Dublin, on an eastern coast. An extraordinary contrast was presented by the weather of the week ending Saturday, the 11th, to that of the preceding week—the mean temperature (50·4°) was more than 10° lower, while clouded skies with frequent rains, or showers of hail and rain, took the place of the hot sunshine of the end of May and beginning of June. On the 5th and 6th heavy showers of rain fell accompanied with thunder, and on the 7th there was again a downpour of rain and hail at 5 p.m. The following night was extremely cold, the shade thermometer going down to 36·8° on the early morning of the 8th of June. Ice was formed on shallow pools in the country round the city of Dublin. Temperature rose again to some extent on and after the 10th, but the remainder of the month remained comparatively cool and very cloudy and showery. These conditions of weather were caused by the persistence over the Continent of an area of relatively high atmospherical pressure—anticyclonic in character—while a series of more or less important barometrical depressions travelled northwards or north-eastwards

along the western seaboard of the British Islands. In Ireland fresh southerly to westerly winds were consequently prevalent, and the rain-fall or showers were renewed as each fresh disturbance approached from the Atlantic. In the east and south-east of England much more settled weather was experienced, and owing to the existence of less cloud by day the maximal temperatures were considerably higher than in Ireland or Scotland. A large and beautiful comet was seen in the northern sky on and after the evening of Wednesday, the 22nd. In Dublin the mean temperature deduced from the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 56.6° , and that deduced from the maximal and minimal thermometer by Kaemtz's formula was 55.3° , or 1.3° below the average.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

MAY IODIDE OF POTASSIUM EXCITE BRIGHT'S DISEASE?

IN view of the very large doses which have been advised and are frequently administered in the treatment of syphilis, the question whether iodide of potassium may excite Bright's Disease becomes one of considerable importance. In the *American Journal of the Medical Sciences* for July, 1881, Professor I. Edmondson Atkinson, of the University of Maryland, calls attention to the large proportion of cases treated for advanced syphilis that present, after death, evidences of marked kidney disease; and, in this connexion, to the fact that syphilitic renal disorder in its characteristic lesion, the gumma, is comparatively rare, while the forms the most frequently encountered are not in themselves syphilitic. In searching for a cause that might produce these changes quite independently of the syphilitic poison, Dr. Atkinson concludes that since iodide of potassium has decided diuretic action, and, as is known to clinical observers, may cause both albumen and casts to appear in the urine, the continuance of this remedy in some cases might lead to the changes observed. He therefore made a series of observations upon seventy cases of late syphilis, of which nineteen presented evidences of renal alterations more or less grave. The relation existing between the administration of iodide in these cases and the appearance of mucous or hyaline casts and albuminuria was quite evident, as in a number the abnormal elements gradually disappeared after the cessation of the remedy. The condition appeared to be catarrhal in character, and the casts were the results of renal irritation. In no case, however, was extensive parenchymatous inflammation of the kidneys excited; but an obvious syphilitic

disorder of the kidney in one case disappeared under the full and systematic use of the iodide. The author's conclusion is, that while the evil effects of the iodide of potassium are small and for the most part transitory, the occurrence of more severe alterations is not impossible—nay, is probable. To these evil effects some individuals are more susceptible than others.

LOCOMOTOR ATAXIA DIFFERENTIATED FROM FUNCTIONAL CONDITIONS
WHICH SIMULATE IT.

IN the *New York Medical Journal* for May, 1881, Dr. A. D. Rockwell, Electro-Therapeutist to the Woman's Hospital, in New York, remarks that the astonishing affirmations concerning the curability of spinal sclerosis that were current in German literature a few years ago are far from being confirmed by later experience. The grouping of symptoms of many of the cases reported in no way indicated grave lesion of the cord, and in some cases were little more than typical illustrations of simple spinal irritation. In other cases of reported cures the symptoms presented were more in accordance with those observed in posterior spinal sclerosis. In these cases of recovery, of which quite a number have occurred in his own practice, it may be asserted, he thinks, without fear of contradiction, that serious structural changes in the cord did not exist. The distinction might very properly be made that they were cases of ataxia, but not of posterior spinal sclerosis. In consideration of this evident fact, the following interesting and important question is suggested:—In cases presenting symptoms commonly supposed to be pathognomonic of posterior spinal sclerosis, is it possible to differentiate between structural and functional phenomena? For some years it has been usual with him to give an unfavourable prognosis in *all* cases, but, at the same time, in recognition of the fact that recoveries have occasionally taken place, it seemed justifiable to recommend tentative treatment. If improvement up to a certain point follows and then permanently ceases, it is very probable that we have a case of locomotor ataxia with spinal sclerosis as the cause. If, however, the case be one of simple ataxia, simulating posterior spinal sclerosis, it becomes evident by progressive improvement up to complete recovery. The author gives condensed notes of fourteen cases, and discusses the diagnostic import of the prominent symptoms. We cannot manifestly depend, he says, on any one symptom, and perhaps not on any single grouping of symptoms. Although it will be observed that inability to touch a given point on the face was characteristic of all the grave cases, and absent in all the curable ones, yet there may be cases involving only the lower part of the cord, in which this symptom does not appear throughout the course of the disease. This limitation, however, he believes to be exceedingly rare. In the second stage of locomotor ataxia, anæsthesia of the tips of

the fingers, together with inaccuracy of touch, almost invariably exists, showing disease of the upper portion of the cord. As, therefore, this inability to readily touch a given point on the face by rapid movement is so uniformly observed in posterior spinal sclerosis, and is seldom if ever found in cases simulating the same, it may be regarded as one of the most, if not the most, valuable accessory diagnostic signs. Abolition of the tendon reflex and absence of the iridal reflex are also most important symptoms, since in curable cases these phenomena are seldom if ever wanting. On the contrary, neither impaired sexual strength nor the sense of abdominal constriction is of much value, because they are so common to other conditions; nor is he inclined to attach great importance to ocular troubles, except in conjunction with more important symptoms. Incoördination of movement is perhaps the only symptom, subsequent to the full development of the disease, which may not occasionally be absolutely wanting. Unfortunately, however, for its value as a single diagnostic symptom, it is *the one* symptom through which functional has been so readily mistaken for organic disease. Pains of a fulgurating character generally precede ataxic symptoms, but not always, and for months and even years the patient may be quite free from more than transient and vague pains. In the second stage, however, or after the appearance of ataxic symptoms, it is not very difficult to distinguish between structural and functional causes. As regards the electro-therapeutics of this disease (and, however unsatisfactory it may be, it affords quicker and more permanent relief than other methods), he is led to insist upon thoroughness of treatment. General faradisation will accomplish much more than local applications of either current, and in many and perhaps the majority of cases of posterior spinal sclerosis will be followed by more or less alleviation. In the not very infrequent and persistent condition simulating sclerosis it acts rapidly and effectively.

THE DEATH SMELL.

DR. A. B. ISHAM, Professor of Materia Medica and Therapeutics in the Cincinnati College of Medicine and Surgery, calls attention in the *American Journal of the Medical Sciences* for April, 1881, to the peculiar *ante mortem* odour encountered in many cases at a variable period before the fatal result; in one case he noticed it thirty-three hours before death. The smell is analogous to musk, but is rather more pungent and less diffusible. He is inclined to attribute the phenomenon to the liberation of ammonia, and of the peculiar volatile oil (fatty acid) which gives the blood its odour; this liberation being caused by the diminishing vitality of the blood.



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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*Functional Murmur in the Pulmonary Artery.* By
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to the Mater Misericordiæ Hospital; and Physician-in-Ordinary
to the Lord Lieutenant, &c.

DURING the past two years my attention has been directed to the occurrence of murmur in the pulmonary artery under various conditions. The frequency with which I have met with the murmur in question leads me to direct attention to it—firstly, to point out that in most cases it possesses no significance as a sign of any special disease; and secondly, to guard against an error of diagnosis not uncommonly made in connexion with it—viz., regarding the murmur as a sign of localised pericarditis.

Before mentioning the various conditions under which I myself have noted the existence of this functional murmur, I shall briefly allude to some of the different circumstances under which it has been observed by others.

Whilst all writers admit that anæmic arterial murmur is systolic in time, the views entertained as to the site of its production are by no means in like accord. Hope held that it was developed in the aorta, Hughes in the pulmonary artery, and Parrot at the right auriculo-ventricular opening. It must, I believe, be conceded that an anæmic murmur may be developed in either artery, whilst the murmur which we hear occasionally in the tricuspid area is

connected more closely with overstrain of the right ventricle from obstructed pulmonary circulation than with anæmia.

Systolic pulmonary murmur is met with also in cases where the primary divisions of the pulmonary artery are constricted by inflammatory or cicatricial processes going on in the lung, as in the cases recorded by Immermann, Da Costa, Bettelheim, and Hayden.^a Again, neoplastic deposits in the pericardium compressing the pulmonary artery have been known to give rise to the murmur.

Next we are familiar with the blowing murmur in the pulmonary artery, so accurately described by Latham as occurring in patients who are consumptive, or suspected to be so, and of which he says:—"I cannot say in what proportion of the phthisical it occurs, but I am continually meeting with it." Furthermore Latham points out that in deformities of the chest, such as the pigeon-shaped breast developed in spinal curvature, systolic pulmonary murmur may be produced from the altered relation of the heart to the surrounding parts; and he mentions that in one case under his observation the murmur was produced by the pressure of the stethoscope over the pulmonary area. Of this I met with an instance some months ago in a young girl, aged twenty-four years, who consulted me for the relief of gastralgia; she presented, moreover, some of the signs of exophthalmic goitre. Examining the heart whilst in the sitting posture no morbid sound was audible. On auscultation of the pulmonary area, when the patient was lying down, I was surprised to hear a loud and harsh systolic murmur. She complained of the pressure of the stethoscope; and, on partially withdrawing my ear from the chest, I found that the murmur became faint in character, and on still further diminishing the pressure it ceased to be audible. Again making pressure with the stethoscope the murmur returned with the intensity noticed at first. The patient was extremely emaciated, but there was no malformation of the thorax; there was no murmur audible in the left subclavian artery.

Allied in many points to the murmur described by Latham is that to which Quinke directs special attention, and which, perhaps, needs a somewhat lengthened reference. In wasting diseases of the upper lobe of the left lung, or from simple defective expansion of it, according to this observer, a diminution of pressure against the wall of the pulmonary artery results. During the systole

^a Diseases of the Heart and of the Aorta. Page 1002.

of the ventricles a twist is developed at the root of the artery, which, by producing a number of fluid veins at the origin of the vessel, gives rise to a murmur strictly localised to the pulmonary area. The murmur thus produced is, in my experience, of a remarkably rough, thrilling, or grating character. It is usually accompanied by a basic impulse in the second left intercostal space, and is followed by a distinct sensation appreciable to the touch of the clicking of the semilunar valves. A point apparently in favour of Quinke's explanation of the cause of this murmur is, that it diminishes in intensity or altogether disappears during the acme of a forcible inspiration. I have had the opportunity of making a *post mortem* examination in one case where a murmur of the character described existed in a marked degree for some time before death. It occurred in a patient, aged thirty-two years, who had been under my care in hospital suffering from locomotor ataxy. There were signs of advanced phthisical disease in the apex of the left lung. About a fortnight before death, upon examining the heart, I heard over the pulmonary area a sound of such a markedly-grating character, and apparently so close to the ear, that I at once diagnosed pericardial inflammation. The murmur was, however, a single one, and completely coincided with the first sound of the heart. A feeble thrill could be felt over the site of its development. The examination of the murmur from day to day, up to the time of the patient's death, revealed no change in its acoustic character; and one of my colleagues who examined the case with me concurred in the view which I entertained of its being a sign of localised dry pericarditis. At the autopsy, however, no lesion, dryness or otherwise, of the pericardium or of any of the valves of the heart was found. The apical portion of the left lung was infiltrated with tubercle and the seat of a number of small abscesses. It was atrophied to a considerable extent.

Except in the instance just mentioned, I have not had an opportunity of examining the morbid conditions with which pulmonary murmur as described by Quinke is associated.

I now propose calling attention to the classes of cases under which I have noted the existence of murmur in the pulmonary artery, and which, so far as I know, have not been heretofore described. The notes made of the cases which came first under observation represent most of the conditions referred to. Those given are of the briefest kind, and only deal with the subject under

consideration; for many of them I am indebted to Drs. Robert Browne and J. B. Murphy, former clinical clerks in the Mater Misericordiæ Hospital.

CASE I.—J. W., male, aged twenty-four, convalescing from enteric fever of moderate severity. Rough systolic murmur heard over pulmonary artery, followed by a double second sound. Murmur only heard in horizontal position, disappearing immediately when the patient sat up in bed; becomes extremely feeble during full inspiration.

CASE II.—R. F., female, aged fourteen, suffering from gastric dyspepsia. Systolic pulmonary murmur audible in second left intercostal space, followed by a double second sound; double pulsation of arteries of neck; no signs of bronchitis; murmur ceases when patient takes a deep breath.

CASE III.—B. T., female, aged eighteen, admitted to hospital suffering from paraplegia depending upon myelitis. Pulmonary systolic murmur audible, and a basic impulse to be felt in third left intercostal space. Murmur ceases during full inspiration.

CASE IV.—M. K., female, aged eighteen, suffering from simple continued fever of a prolonged nature. Double impulse over root of pulmonary artery in third left intercostal space; the second impulse, feebly marked, representing the clicking of the semilunar valves. Systolic pulmonary murmur heard both in vertical and horizontal postures; less pronounced during full inspiration, and followed occasionally by a double second sound. Feeble respiratory sounds audible over apices of both lungs.

CASE V.—M. Q., male, aged forty, admitted to hospital suffering from acute articular rheumatism. During the progress of the disease a rough systolic murmur became audible over the pulmonary area. The murmur ceased during a full inspiration, but became intensely marked during the succeeding expirations. It was audible only in the horizontal position. During full inspiration the murmur resolves itself into a double first sound, followed by a second sound sharply defined. Some ten days after the existence of the murmur was first noted, it became but feebly marked, and was succeeded by a well-pronounced double second sound. The pulse at this period was 68 in the minute.

CASE VI.—M. L., male, aged twelve. The boy, who was very emaciated, was admitted into hospital suffering from tubercular meningitis. Rough systolic pulmonary murmur audible; basic pulmonic impulse; respiratory movements of chest feeble, but no evidences of pulmonary disease. Murmur becomes intensified during forcible expiration.

CASE VII.—F. R., female, aged eighteen, admitted to hospital convalescing from acute articular rheumatism. Loud rough systolic murmur audible; best heard in horizontal position, but feebly audible during forcible inspiration.

CASE VIII.—M. L., female, aged twenty-five, suffering from rheumatic fever. Respirations shallow; chest flattened; rough systolic murmur over root of pulmonary artery, followed occasionally by a double second sound. Murmur less marked during full inspiration, and heard only in horizontal posture.

CASE IX.—M., male, aged thirty-four, admitted into fever ward suffering from maculated typhus. On the thirteenth day of fever signs of bronchitis present over the posterior aspect of the chest. Respiratory murmur rough over upper lobe of left lung, and occasionally replaced by faint breezy crepitation. Basic impulse over root of pulmonary artery, and sensation of clicking of semilunar valves communicated to the touch. Systolic pulmonary murmur of usual character well marked; inaudible during acme of full inspiration. Pulse, 106; dicrotous pulse in carotids; respirations, 28.

CASE X.—E. C., female, aged fifteen, admitted to hospital suffering from acute articular rheumatism. Rough, thrilling systolic murmur in pulmonary artery, not influenced by respiration or position; well-marked paralytic thorax.

CASE XI.—K. R., female, aged nineteen, very emaciated, admitted into hospital complaining of symptoms of spinal irritation. She was subject to attacks of profuse sweating and cardiac palpitation. Menstruation irregular; urine contains a large number of oxalate of lime crystals. Some days after admission well-marked basic impulse over pulmonary artery noticed. Exceedingly loud, thrilling systolic murmur audible in this situation; intensified by making pressure with the stethoscope; ceases completely during and immediately after full inspiration, returning after three or four ordinary respiratory movements. Sibilant râles heard over upper lobes of lungs in front. Murmur only faintly audible whilst patient sat up in bed. Pulse, 102.

CASE XII.—J. W., male, aged nineteen, admitted into hospital suffering from enteric fever. After a relapse a loud systolic murmur was heard over pulmonary artery. It disappeared during full inspiration, returning during the succeeding ordinary respiratory movements. The murmur was audible in the vertical position, but ceased to be audible after any forcible exertion, such as throwing the arms forcibly backwards, &c. In this case there had been an extreme degree of sweating complained of.

CASE XIII.—J. B., male, aged sixty-two, admitted to hospital presenting most of the signs of multiple cerebro-spinal sclerosis. No evidence of anæmia; rough systolic murmur audible over pulmonary artery, presenting usual characteristics as regards respiration. Best heard in horizontal posture, but feebly pronounced when patient sits up in bed; absent when patient got out of bed and walked a short distance through the ward.

CASE XIV.—E. T., female, aged twenty-five, admitted to hospital for acute articular rheumatism. Loud, grating systolic murmur heard over pulmonary artery, and mistaken by some members of hospital class for a pericardial friction sound. Usual condition as regards respiration. Murmur audible for some six or seven days after all pyrexial symptoms had subsided.

CASE XV.—J. K., male, aged forty-five, under observation for a lengthened period, suffering from cirrhosis of the liver, with an extreme amount of ascites and dropsy of lower limbs. A rough systolic murmur was heard over the pulmonary area both in the horizontal and vertical positions; its intensity was lessened during forcible inspiration. On two occasions the fluid was removed from the cavity of the peritoneum—in the first instance by mercurialisation, in the second by paracentesis. When the extreme pressure upwards of the diaphragm had been removed the murmur ceased to be audible, but when the fluid accumulated after tapping, and the tension of the abdomen was restored, the murmur again became distinctly marked, and continued to be audible up to the time of death.

Since the foregoing cases were noted, many others similar as to the conditions under which pulmonary murmur occurs have been observed; and I consider, judging from my experience, that in the examination of the heart this murmur will be found to exist much more frequently than is generally supposed.

It may be well now to dwell upon the special characters of the murmur, the signs which simulate it, and from which it has to be distinguished, and its probable mode of production.

Characters of the Murmur.—It is systolic in time, heard at its maximal point of intensity in the second left intercostal space close to the sternum, is not transmissible upwards in the direction of the left subclavian artery, or downwards over the ventriculum cordis. It is usually of a grating character, except when dependent on anæmia, when it is soft and blowing. It seems to be developed close to the ear, is frequently accompanied by a basic impulse, and closely resembles, but for its single character, a murmur of

attrition. It varies considerably in intensity, and is, almost in every instance, markedly influenced by the respiratory movements. Whilst it is fairly pronounced during ordinary inspirations, it usually disappears at the acme of a forcible inspiration, its return during three or four succeeding quiet respiratory movements being one of gradual progression. The murmur is sometimes followed by a double second sound; more frequently its subsidence appears to so alter the cardiac rhythm as to produce the reduplication. It is heard best in the horizontal posture, being frequently inaudible in the vertical one. Whilst it is sometimes attended with signs of bronchitis in the upper lobe of the left lung, and sometimes in that of both lungs, it often exists independently of this condition; its presence is, however, almost invariably associated with feeble respiratory movements. In some cases where the murmur is audible when the patient is sitting up, a brisk movement of the arms causes it to disappear.

Signs which simulate it.—The three conditions which are likely to give rise to errors of diagnosis in relation to pulmonary murmur are—limited dry pericarditis, left subclavian murmur, and the variety of mitral murmur described by Naunyn. Firstly, with regard to pericarditis, I may remark that I have seen more instances of error in connexion with the supposed existence of this lesion than with any other. The occasional extreme harshness or grating character of pulmonary murmur, its proximity to the ear, the presence of a thrill appreciable to the touch over that part of the heart where the signs of pericarditis are first developed, and the frequent occurrence of the murmur in cases of rheumatism, may account for the mistaken diagnosis of limited dry pericarditis. It is needless to recapitulate the peculiarities of pulmonary murmur already dwelt upon which enable us to attach the correct value to the sign. It is sufficient to point out in relation to the error in question the single character of the murmur, its localisation, its duration, the absence of all signs of pericardial effusion, and its existence without there being any rise in the temperature.

Murmur in the left subclavian artery may, from its proximity to the trunk of the pulmonary artery, simulate a murmur developed in the latter. The direction of transmission of a subclavian murmur, its association with tubercular or other disease of the apex of the lung, its occurrence in a certain class of mechanics, and the influence which the position of the arm exercises on its intensity, are points which should aid us in making the distinctive diagnosis.

It may be remarked that pulmonary murmur is, as a rule, limited to a small area, and is not heard under the left sterno-clavicular articulation or along the clavicle.

The systolic mitral murmur which is to be heard at its maximal degree of intensity in the second left intercostal space, one or two inches from the margin of the sternum, is likely to be mistaken for a murmur in the pulmonary artery. I quite agree with Dr. Balfour as to the frequency with which a murmur of mitral reflex is heard best over the situation of the left auricular appendix, and the liability which exists to attribute to it an erroneous value. The characteristic features of this murmur have been so fully laid down by Naunyn as to render it unnecessary to dwell upon them here. The important distinctive points to note with regard to the murmur are:—It has not the grating or thrilling character of the pulmonary systolic murmur, it is not heard close to the sternum immediately over the site of the pulmonary artery, and it is not influenced by position or by the respiratory function.

Mode of production of the Murmur.—Having enumerated the different conditions under which this murmur is met with I may now refer to the probable mode of its production. If we admit the completeness of Chauveau's experiments, we must accept his teaching that *bruit de soufflet* cannot be produced without an alteration taking place in the calibre of the vessel in which it is formed. Chauveau's own words are as follows:—" *Bruit de soufflet* is always produced by the vibrations of an intravascular *veine fluide*, and such a *veine* is constantly formed whenever the blood passes with a certain force from a narrowed into an actually or relatively dilated part of the circulatory system." Whether or not mere alterations in the quality of the circulating fluid are capable of producing murmur, as maintained by De la Harpe and Richardson, is not a question that need be discussed in this paper. The theory of Chauveau is, however, the more interesting, as it affords an explanation of the occurrence of *bruit de soufflet* where the blood is lessened in quantity. Thus the anæmic murmur heard in the aorta, or pulmonary artery, is produced by the dilated condition of either vessel as compared with that of the medium-sized arteries and veins and the heart itself, all of which are capable of adapting themselves in size to the diminished volume of the blood. The conditions favourable for the production of *bruit de soufflet* exist then at the orifices of the heart—*i.e.*, the blood passes through a narrowed orifice into a dilated portion beyond. Similarly the occurrence of *bruit de diable*

may be explained by the ampullar dilatations of the innominate veins maintaining an uniform size, whilst the jugular veins which lead into them retract, so as to accommodate themselves to the diminished quantity of the blood.

However, the problem to be solved here is—What are the conditions in the pulmonary system which will account for the occurrence of murmur in the pulmonary artery under the circumstances mentioned in this paper? I do not, I confess, consider the explanation offered by Quinke at all conclusive, and the cases to which it can be applied are, in my opinion, of rare occurrence. In the first place, in the great majority of the cases in which the murmur is present there is no evidence of defective expansion of the upper lobe of the left lung more than that of the right; and, secondly, in many cases where from disease of the upper lobe of the left lung the pressure against the wall of the pulmonary artery may be reduced almost to zero the murmur is absent. The observation that murmurs are often unaccountably absent when the conditions for their production are present is scarcely correct. The mystery regarding the absence of a murmur lies in assuming conditions to be essential for its production which are merely accidental; if the conditions were correctly determined, obviously the same physical effects would follow like physical causes. It is not easy, moreover, to understand how a diminution of pressure against the wall of the pulmonary artery is brought about. If there be defective expansion of the lung or lungs, a corresponding diminution in the extent of the movements of the chest results; its cavity is proportionately lessened in size, so that pressure against the wall of the artery cannot be much, if at all, altered. Again, even if it were granted that defective expansion of the lung leads to a diminished support to the arterial wall, we must conceive the lung having a smaller volume during expiration than normal to account for the fact that during expiratory movements the murmur is usually markedly discernible. In most instances where a functional pulmonary murmur exists, and where it does not depend upon direct pressure on the trunk of the vessel or on its main branches, I believe it to be caused by a diminution of tension in the artery, which permits a twist or constriction to be formed at its root during the ventricular contraction. One of the commonest conditions associated with the murmur is a feeble character of the respiratory movements. From the general weakness or lassitude attendant upon an exhausting illness, such as acute articular

rheumatism or enteric fever, the lungs are imperfectly expanded. The quantity of air ordinarily inspired being merely sufficient to overcome their elasticity, the blood passes with an unusual degree of facility through the capillaries of the pulmonary artery; the tension of the latter is greatly lowered, probably its trunk is shortened, so that during the systole of the ventricle a condition favourable to the development of a twist at the origin of the vessel is established. The full expansion of the air-vesicles during forcible inspiration restores the normal tension of the artery, and the tendency to the production of a twist at its root is obviated. In other words, the condition of the artery during feeble respiratory efforts is one of defective tone—if we can apply the term to a vessel which contains little or no traces of muscularity—the defect being due to diminished capillary resistance. A point which may be mentioned as favourable to the view just expressed is that during forcible inspiration in the normal state the pulmonary second sound becomes markedly accentuated. Furthermore, the subsidence of the murmur in the vertical position may fairly be attributed to the effect of gravity—the weight of the heart exercising a traction influence which helps to maintain the calibre of the arteries springing from it unaltered.

In some cases it is conceivable that extreme pressure on the diaphragm from below may cause the murmur in two ways, by dislocation of the heart upwards, which relaxes or shortens the trunk of the pulmonary artery, and by impeding the normal extent of the respiratory movements. In Case XV. the murmur was, I believe, produced in the manner here indicated, and it would be interesting to note if other lesions causing a similar displacement of the diaphragm are attended with a like result. I allude specially to cases of ovarian dropsy or extreme abdominal tympanites.

Summary.—I may, in conclusion, recapitulate the points to which I have directed attention.

1. That a functional murmur in the pulmonary artery, independent of anæmia or of direct pressure on the trunk or branches of the vessel, is not of infrequent occurrence.

2. That the conditions, given in order of frequency, in which it occurs are—

- (a). Acute articular rheumatism.

- (b). Enteric fever.

- (c). Fevers where there is great prostration and a tendency to profuse sweating.

- (d). Bronchitis, or œdema of the upper lobe of one or both lungs.
- (e). Nervous diseases, such as paraplegia from myelitis, tubercular meningitis, or in a debilitated state of the system, generally associated with hysteria or hypochondriasis.
- (f). Cases where, as from extreme serous distension of the cavity of the peritoneum, the diaphragm is subjected to great pressure upwards.
- (g). Trivial affections, such as diarrhœa, dyspepsia, &c., especially where there exists a tendency to the paralytic thorax. Here it is usually met with in young and imperfectly-nourished adults, and occurs more frequently in females than in males.

3. That from the various conditions under which the murmur occurs it cannot be regarded as a sign of any special disease. It is in most cases of temporary duration, and it may occasionally be met with in a state of apparent health.

4. That its characters closely simulate those of a murmur of attrition—hence it has, I believe, in many instances been erroneously regarded as a sign of localised pericarditis.

ART. VI.—*Remarks on Two Cases of Strangulated Hernia.*^a By THOMAS EVELYN LITTLE, M.D.; Surgeon to Sir Patrick Dun's Hospital.

THERE is, perhaps, no class of surgical cases which is described as more typical in our ordinary text-books—whether as regards clinical history, pathological anatomy, or operative treatment—than that of strangulated herniæ; and yet, I think (and in this I am sure I shall be borne out by the opinions of all practical surgeons, as well as by the perusal of recorded cases) there is scarcely any class which, in the individual instances met with, seldomer conforms to the regular text-book type. In fact, almost every case seems to present to a certain extent a study in itself, and this observation is perhaps more true of some of the details met with in connexion with the operation (where resorted to) than of any other particular.

It is for the reason that the two following cases presented in their course certain special peculiarities, of not common occurrence,

^a Communicated to the Dublin Biological Club, May 30, 1881.

that I consider them deserving of a brief record, and of a few remarks.

The first was a case of strangulated congenital hernia in a man; the second one of strangulated femoral hernia in a woman.

CASE I.—*Inguinal Hernia, Strangulated; Congenital, with undescended and Atrophied Testis; Rupture of the Sac.*—W. D., aged forty-two, a strong and healthy labourer, unmarried, was brought to Sir Patrick Dun's Hospital on the morning of Monday, December 20th, 1880, with a strangulated inguinal hernia of the left side. I saw the patient some short time after his admission. In the meantime the taxis had been tried without success, and he had had a hot bath and a full draught of laudanum. When I saw him the tumour was of about the size of a large fist. It was, I observed, of more than ordinarily globular shape, yet still having the *contour* of a couple of folds of intestine faintly indicated on the surface. It was excessively tense, and very painful and tender. It gave a dull tympanitic sound on percussion, and was quite devoid of any impulse on coughing. There was no general abdominal tension or tenderness. I was told that the tumour had increased somewhat in size since the man's admission.

I attempted the reduction of the protrusion by taxis while the patient was in the warm bath, and subsequently under the full influence of ether, but without making the least impression upon it. Dr. Bennett, who saw the patient with me immediately afterwards, also tried the taxis, but without success. We agreed to meet about the case again in three hours. I had him given another full opiate, and ordered an ice-bag to be applied meanwhile to the tumour.

In the meantime we collected the following meagre particulars as to the previous history of the case:—[The man was, as we soon afterwards learned, of singularly apathetic temperament, and feeble intellectual powers, so that the difficulties of obtaining any very definite account were unusually great.] The patient had had an old, but generally easily reducible, rupture for "as long as he could remember," although he could not positively say whether he was born with it or no; but he thought not. He had for years worn a truss. On one or two occasions he had great difficulty in its reduction; and about eighteen months ago, being unable himself to accomplish this, he was obliged to apply to one of our hospitals, where the tumour was reduced without operation. On the present occasion the tumour became irreducible at half-past seven o'clock of the morning of the day on which he was admitted to hospital while at his work, on going out to which, he said, he felt quite well.

At three o'clock, p.m., Drs. Bennett and Macalister met me in consultation about the case. In the interval the tumour had undergone a marked change, and the man had suffered much from extreme pain of

the abdomen in its neighbourhood, and had vomited frequently with great distress to himself; the vomited matter was, however, not in the least stercoraceous. The tumour had increased with surprising rapidity; it was now fully three times its original size, and was still more tense than before. The most marked change, however, about it was that it had now become extensively—almost universally—livid, and in parts almost black on the surface; presenting, in fact, at first sight all the aspect of threatening gangrene of the whole mass.

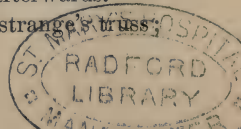
Under these circumstances it was, of course, determined to proceed immediately with the operation, without any further attempt of taxis.

In the course of the operation the facts which were noteworthy were these:—After cutting through the skin and superficial fascial structures, the tissues of the scrotum, especially at its inferior part, were found to be considerably cedematous, infiltrated with very darkly-coloured serum. I had previously, for sufficiently obvious reasons, determined upon in any case opening the sac before dividing the constriction; but, indeed, it was found that to determine in this case when the sac was reached, and to discriminate that important structure from the mass of surrounding infiltrated tissues, was no easy matter; and for the reason, as soon became apparent, that we had to do with a case in which the sac had become ruptured. It was found that portions of this structure could be stripped in shreds from off the underlying folds of intestine, to which these shreds had even already become lightly adherent by a very delicate layer of recent lymph. When the hernial contents were fully exposed they were found to consist of several coiled loops of small intestine, without any omentum, in the midst of which, and at a short distance below the place of constriction, was observed a small whitish glistening body, which was readily identified as a very small undescended and atrophied testicle. The intestine, though intensely congested, was nowhere apparently gangrenous, nor, on its being exposed, was there the least trace of the characteristic gangrenous odour. On division of the constriction the parts were reduced without trouble. The extent of gut protruded in this case was, I conceive, exceptionally great, especially as the case—according to the patient's representations—had always been one of a small-sized rupture. I am sure that, when reduced during operation, the length of bowel constricted measured considerably over three feet.

This case, during operation and in the subsequent dressings, was conducted under strictly antiseptic practices.

I need not dwell on the progress or after-history of this case. The patient made an uninterruptedly good and rapid recovery. The wound healed throughout by first intention. The bowels were naturally moved on the fourth day after operation, and remained regular afterwards.

He was discharged on March 5th, 1881, wearing a L'Estrange's truss.



and has, I have since heard, been engaged as usual at his ordinary labour.

It was observed by the man himself that, after the operation, the testicle now lay at a level considerably lower than before. It was now situated well below the external inguinal ring, whereas the patient assured me that previously its site was in the inguinal canal, above Poupart's ligament. This change of position, however, really proved rather a fortunate circumstance for him in connexion with his future wearing of a truss, the pad of which now fitted him well and comfortably above the testis and over the internal inguinal ring, which, without some special arrangement, an ordinary truss could not have been made to do, as the testicle originally lay.

CASE II.—*Femoral Hernia ; Irreducible ; Strangulated ; Adhesion of the Sac.*—M. T., aged fifty-two, a widow, who had never had children, and an active and apparently healthy woman. The only ill-health she had ever complained of was what she calls occasional "bilious attacks," with frequent sick stomach and vomiting. I mention the vomiting, as it may possibly account for the rupture in her case, of any cause of which she can give no otherwise definite account; especially as she describes this symptom as having lasted for some years, and as often of great severity. Moreover, she told that she had had a more than usually severe attack some few days before admission to hospital.

She was admitted to Sir Patrick Dun's Hospital on the morning of January 21, 1881, suffering from a strangulated femoral hernia of the left side.

The history we could gather of the case amounted to this:—She first noticed, she says, the tumour about six or seven months ago. She declares that it came on in a gradual way, and that, although she had observed slight differences in its size at different times, and according to differences of attitude, it had since its appearance never at any time completely disappeared, nor was it ever, to her observation, capable of total return into the abdomen. She had never worn a truss, as indeed she had never known or suspected the nature of the affection until the occurrence of the strangulation on the present occasion.

On admission the tumour was of about the apparent size of a small orange, was situated quite below Poupart's ligament, and was of irregularly globular shape. The integuments over it were perfectly natural, and superficially movable; but, beneath these the tumour could be felt to be extremely hard, fixed, and unimpressionable. It had no impulse on coughing. As to its nature, as a strangulated femoral hernia, there could be no question, and there was no difficulty in the diagnosis. The ordinary symptoms of complete strangulation were, though sufficiently characteristic, hardly yet, however, fully developed. She had vomited

twice since admission, the vomited matters consisting chiefly of whatever food or drinks she had lately taken, tinged with bile, but with no trace of stercor. Her bowels had not been moved for two days—that is, on the morning of the third day before her admission she had had a motion; but, as her bowels were habitually occasionally constipated, she did not make much account of this. The taxis, tried patiently for some time, failed to make the least impression. An injection, with O'Beirne's long tube, was given, but brought away nothing but the returned fluid and a few very small scybala. Taxis was again tried, without success. The symptoms presenting no urgency, it was determined to leave her for some hours' rest, a full opiate having been meanwhile administered.

Drs. Bennett and Macalister met me by appointment in the evening, when I had determined to proceed immediately with operation, in case we still failed in reducing the tumour by taxis on the administration of ether. On our return there was no perceptible change in the tumour, except that it seemed, perhaps, slightly more hard and tense than before, but not appreciably increased in size. She had vomited several times since, and could make no attempt to keep anything taken internally on the stomach. The vomited matter now, too, presented distinctly the characters of the contents of the upper bowel, but had *not* any distinct stercoraceous odour. She had otherwise held up well; pulse quiet and soft; no abdominal tenderness; and aspect good.

After getting the patient fully under the influence of ether, and seeing that her muscular system was, as far as possible, completely relaxed, a fair trial of taxis was made, but without producing the least change. I then proceeded with the operation. After having made the more superficial incisions, and having divided the several layers of fasciæ down to the sac, we immediately saw that the protrusion consisted of a small mass of omentum above and a couple of small loops of lesser intestine below. I had proposed to endeavour to divide the stricture without opening the sac; but after having, as I believe, done so, I found the reduction of the mass into the abdomen quite impracticable. The reason of this failure was soon apparent. On now going on with the intention of opening the sac an unexpected difficulty arose. Proceeding with the greatest caution, we found that I could not reach or open into any sac whatever, in the ordinary sense of a sac. There was, that is to say, no cavity containing serous fluid between the overlying structures and the hernial contents. In fact, the cavity of the peritoneal sac had become obliterated by comparatively old and apparently very universal adhesions of its outer layer to these contents. Moreover, the omentum which was now found lying, as usual, like a sort of cap, over the upper and anterior parts of the intestinal portion of the protrusion was itself firmly adherent to the latter (the gut)—so adherent that their separation or dissection from one another would have been a matter of considerable

risk to the safety of the gut. Having, as far as was safe or practicable under the circumstances, cleared and exposed the mass of omentum and intestine in the hernia, and on then introducing the probe-pointed hernia knife between the protrusion and the remaining constriction for the purpose of its division, we now observed for the first time the escape of a very small quantity of dark-coloured serum. It is clear from this that the sac had become adherent throughout over the whole extent of the protrusion, except immediately at the upper part of the neck. On this division no further trouble in the reduction was experienced. This operation, also, was conducted under the antiseptic spray; and the case was afterwards on every occasion dressed with strict antiseptic precautions.

In the after-course of this case there was only one occurrence which deserves notice, or which at all complicated the progress to the complete recovery eventually made. The wound did not heal by first intention as in Case I., except at its lower parts to some extent, and for some time (for about three weeks, viz., from Jan. 31st to Feb. 23rd) the wound was kept open by the sloughing of some of the fascial structures, and probably some remaining shreds of the sac, in the situation of the operation. This was, however, unaccompanied with any constitutional disturbance of account, the temperature never reaching during all the time a higher point than 99.6° , and after the coming away of all small sloughs the wound healed completely and rapidly. The bowels were moved on the fifth day, but not until after the administration of a mild purgative.

The patient was discharged on March 29th, 1881, and is now going about quite well.

Remarks.—I may add a few additional remarks, suggested by consideration of the special peculiarities of the cases just detailed.

In both instances the chief point of interest—as it appears to me—attaches to the conditions of the hernial sac here met with. We have, that is to say, in these cases examples of two of the varieties of (so-called) *pathological* absence, or deficiency of the sac; as distinguished from varieties of its *physiological* absence, such as are explainable by normal anatomical arrangements (*e. g.*, as in herniæ of the cæcum, parts of colon, bladder, &c.). In the first of the cases we have an instance of its absence as a sac, at least in the ordinary and practical acceptance of the term, in consequence of its rupture; in the second, we have an absence, in a similar sense, from adhesion and consequent pathological obliteration of the cavity. Both of these pathological complications—and more especially the former—are, I believe, rare; and

their occurrence in the two cases given is sufficiently noteworthy to render them deserving of record.

These cases, too, illustrate, in some points at least, some of the practical difficulties during operation which such conditions of the sac may give rise to. In both there was an excusable difficulty met with in determining when we had *arrived at*, and when we had *opened into*, the sac—two stages of such recognised cardinal importance in the mechanism of the operation; and that for the efficient reason that no sac, in the usual practical interpretation, was there.

In the clinical history of Case I. the enormous and exceptionally rapid enlargement, and the equally rapid congestion and lividity of the surface, of the scrotal tumour, as well as the œdematous condition of the tissues of the scrotum are, of course, connected with, and easily explainable by, the rupture of the sac. Another cause, however, may be given for this extreme rapidity in the development of the local signs, arising from the nature of the hernia—viz., as one of the congenital variety. Again, in speaking of the characters of the tumour in this case, I alluded to the unusually spherical shape it presented. Now, these two peculiarities—this distinctive shape, and the unusually rapid advance of the symptoms of strangulation—are recognised as especial characteristics of this congenital form of the disease; and the observation, it will be noticed, is borne out in my case.^a A practical indication, worth bearing in mind, in connexion with cases of this (*i. e.*, the congenital) kind, is that, inasmuch as in such cases we may with certainty infer the anatomical relations of the neck of the sac to be those of the oblique variety of descent, our incision of the stricture may be most safely made upwards and outwards—the epigastric artery lying to the inside.

In connexion with the clinical history of Case II. there is one point which, I think, interestingly falls in with, and is consistent with, our observation during operation of the obliteration of the sac by old-standing adhesions. I mean the fact—mentioned by the patient—that from its first, and apparently rather gradual, appearance the tumour had never returned into the abdomen, but had remained, from the first, fixed in its original situation. In fact, the hernia was irreducible.

^a For another case, illustrating these remarks, and in some particulars resembling the one I have reported, see Proc. Path. Soc. Dub. Vol. I., p. 251. Case by Mr. Adams.

It has been often observed that abnormal adhesions in hernia are more frequent in cases where the omentum constitutes the prolapsed part; and, in this case, the omentum—which I have already mentioned as forming part of the hernial contents—invested the intestinal portion of the hernia to a considerable extent, and was, undoubtedly, mainly concerned in the adhesions which existed. It may be noticed, as perhaps somewhat special in this case, that the adhesions seemed to be confined to the body of the tumour, and not to involve the region of the neck, as the details of the operation above given go to show.

The peritoneal and subperitoneal tissues at the neck were, however, evidently much thickened and indurated. The prevalence of indurations of this kind—particularly in more or less chronic and especially irreducible herniæ—which form, I believe, a more frequent and important element in the causation of the strangulation than is generally recognised, constitutes an objection to the practicability of the operation “without opening the sac,” which has been somewhat overlooked. I mention this more particularly as some authorities consider that Petit’s operation is more especially indicated in cases of irreducible herniæ. This may be so, as a general rule, but does not certainly hold in cases where an element in the difficulty of reduction is the induration in the situation I have alluded to. It undoubtedly presented an insuperable difficulty in my case. In fact, as long as, in considering the constricting agents, we take account of merely the normal anatomical structures related to the opening through which the protrusion takes place, such an operation may be available; but when the stricture is formed of a pathological thickening of some of the actual structures which compose the neck of the sac itself, it is evident that the sac must be opened.

I cannot conclude without noticing, incidentally, the important indications both these cases afford—*quantum valeant*—of the value of the rigid carrying out of the antiseptic system of dressing, even in the case of apparently most unfavourable wounds, such as we had to deal with here; and such cases as the above involve, we should remember, as severe a test as the antiseptic practice could perhaps be conceivably subjected to. I can hardly help thinking that, in the days of ante-antiseptic surgery we dared scarcely have hoped for such a result as occurred in Case I.—the healing by first intention of an extensive, though necessary, wound, exposing to the air an enormous area of subcutaneous structures,

already black from intensity of congestion, and infiltrated with sanious serum. Again, in Case II., perhaps still more remarkably, although a certain amount of sloughing of soft parts did take place (as the necessary result, probably, of the primary disturbance of parts during the operation), as I mentioned in detailing the case, these effects remained distinctly localised to the area of the original damage, and were quite unaccompanied with any constitutional sympathy of the least consequence.

ART. VI.—*The Wisdom Teeth and Deafness.* By ROBERT T. COOPER, M.D. (Dubl.).

THAT various forms of otitis are a frequent accompaniment of primary and secondary dentition is a fact not to be disputed, but that a most insidious and intractable form of chronic otitis with its accompanying deafness often owes its origin to a tardy or otherwise abnormal eruption of the wisdom teeth is a matter not so easily recognisable, and about which our text-books are unaccountably silent.

My attention has been directed to this matter for some years, and to judge by the number of cases to be met with this mode of causation of chronic dysecoia is by no means uncommon.

It requires obviously a little patience in investigating the history of our cases before we can ascertain for certain whether this mode of origin is distinctly traceable or not; that the wisdom teeth in process of eruption are a frequent concomitant of severe and intractable deafness is obvious enough; that they constitute the sole exciting cause of the deafness is another question, and one more difficult to demonstrate.

That they are very often the unsuspected cause of deafness I have been led to infer—firstly, from the intimate sympathy existing between the teeth and the ears, and the consequent very obvious prejudicial effect of infantile dentition upon these organs; and, secondly, from observing the number of cases of deafness met with that date their initiation from that period of life at which these teeth appear.

Such cases as the following are not at all uncommon, and the dental origin would certainly be unsuspected without special inquiry:—

CASE I.—The Rev. C. H. B., aged fifty, consulted me, June, 1881, for deafness, which has existed, he says, for some twenty years. He cannot

think why it should have come on, but on careful inquiry I find that the wisdom teeth were erupted with great difficulty, that the left lower wisdom tooth "grew into the cheek," was decayed, and had to be extracted; that about twelve years ago the same occurrence took place with either the right or the left upper wisdom tooth—he forgets which—and that it too had to be extracted, after having had years of trouble with it.

The inference, then, is natural that the eruption of the wisdom teeth being difficult, there was occasioned insufficient innervation in the structures of the middle ear. Then take the next case:—

CASE II.—Miss F. S., a young lady of twenty-five years, consulted me, December, 1880, for deafness of the left ear. The hearing of both ears, however, is imperfect ($\frac{7}{35}$ right, $\frac{3}{35}$ left); the left membrane is of a dull opaque hue, the malleus handle being prominent and very white; the right is in appearance normal. Inflation improves the hearing of the right, has no effect upon the left ear. F. S. states herself to have been partially deaf for six years, but never sought treatment for it till a year and a half ago, when after a right wisdom tooth was extracted her left ear began to get noticeably dull. She then consulted a German aurist who put her case down as one of ordinary catarrhal otitis. The left upper and left lower wisdom teeth have not made an appearance.

The inference, then, is plain that the ears and teeth are being contemporaneously influenced. Also, a very important practical deduction for the aurist from this case is to me perfectly obvious, that *we gain no relief to the ear from the removal of the offending tooth*. This may seem to tell against my proposition that the teeth are the cause of the deafness, but in reality my position is not so much this as that simply in the process of dental evolution a prejudicial effect is often wrought upon the ears, the deafness being, in fact, the physiological concomitant of the tardy tooth development—the deafness, therefore, not being always in the position of such obvious causal relationship with the teeth as to justify on this ground alone the removal of these very necessary portions of the economy.

Therefore in all such cases, I would say, let us deal with the teeth upon their own merits irrespective of all aural complication. If, for example, they are painful and carious, let us apply to them the rules that guide the surgeon when dealing with obvious sources of irritation, at the same time being careful to guard ourselves against holding out a hope of, *necessarily*, a sequential improvement in the hearing.

In the next case there is certainly to my mind some proof

afforded that the condition of the teeth may be the veritable exciting cause of the morbid process in the ear.

CASE III.—Mr. H. W., a lad of *seventeen*, was brought to me with intense ear-ache, chiefly on the left side, with otorrhœa. The history given was, that five weeks before otitis, followed after two or three days by otorrhœa, had come on, and that since then, instead of going away, the ear and side of the head remained painful, and that the latter was drawn to the left side and the muscles of the neck stiffened, more so sometimes than at others.

The symptoms ran as follows:—The ear-ache was intense at night, and it is more especially then that the side of the head gets so painful, and he wakes up with the head drawn very much to the side. He goes over his office work (this being his occupation through the day) in his sleep. The pain is like knives thrust into the ear and side of the head, and both head and ear were sensitive to the least touch.

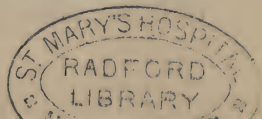
The ear was found on examination sensitive to pressure, but without any visible inflammatory redness or swelling; the membrane was extensively perforated, and the malleus handle could be seen protruding into the meatus and lying against its upper wall.

The patient's bowels had been inclined to constipation, but for the last day or two diarrhœa prevailed.

Upon the occasion of first consulting me the history of the case satisfied me that the symptoms were attributable to bathing alone—that it was not so was shown by the subsequent progress of the case; and I would add that in all these cases we ought to be extremely suspicious of lurking evil when we find that the discharge from the ear brings but imperfect relief.

As is my invariable practice with every ear-patient, I examined his teeth, and found a distinct elevated hardness underneath the gums of both lower jaws, all the more noticeable on the left side, as he had lost two molars from this jaw.

It did not occur to me that in a lad so young as he was the wisdom-teeth could be producing any mischief; and, considering the ear symptoms a sufficient cause for great anxiety, I recommended his discontinuing his usual work. The symptoms did not, however, in any way diminish. He began having cold shiverings in the evenings, with coldness of the feet and hands; the head, especially the vertex, became very painful, and he complained that the weight of his hair was unendurable; the pain in the ear shot down to the shoulder; the ear became more sensitive to noise, and he could not bear any part of his head to be touched or the least noise to be made, and during the paroxysms of pain the head became so drawn to one side that he had to support it with his hand whenever he attempted to turn round sharply.



So he continued, better and worse, from the day I saw him (11th Oct.) till the 16th Nov. (he had been ill for five weeks before this), and on the 16th Nov. a right and left wisdom-tooth came through, the left having given him a great deal of pain when forcing its way, besides having pained him very much on several occasions, as I now heard for the first time, during the past two months.

After this occurred all pain left the ear, and when examined two days after, the discharge from it had ceased and the membrane was evidently cicatrising.

The proof, in this case at least, that the relationship between the wisdom-teeth and the pain and inflammation in and about the ear was that of cause and effect is clearly established.

Take another case—a case of deafness, where the cause was wholly unsuspected even by such an authority as the late Mr. Hinton:—

CASE IV.—W. G. H., aged thirty-four. His deafness he describes as coming on about fourteen years ago; no voice hearing on the left side; hears best in a noise. R. $\frac{5}{40}$, left $\frac{2}{40}$; Eustachian tubes unobstructed; both membranes bulge on Valsalvian inflation. Mr. Hinton injected alkaline solutions, but without result. The lower molars of both sides are singularly huddled together, and the wisdom teeth are pressed back, as though they had an insufficiency of space allotted to them. The inference from this case would be either that the wisdom teeth, in forcing their way between the last molar and the ascending ramus of the jaw, altered the angle of the jaw, and thus caused increased and unnatural pressure to be exerted upon the glenoid cavity, and so influenced the ear, or, what I believe to be more likely, an influence was exerted upon the innervation of both ears and teeth, such as left the former delicately constructed organ in an enfeebled condition.

CASE V.—H. H. J., aged twenty-six; six years ago began to find his hearing dull, and to have tinnitus; consulted a very respectable aurist in Canada, who diagnosed “catarrhal deafness of a very hopeless kind.” The last six months the deafness has got much worse. It is unnecessary to describe his case minutely, except to say that there undoubtedly was a strong catarrhal influence at work. On examining the teeth I found the right lower wisdom tooth had not broken the gum, though lying underneath it, and let us note it was the *right* ear that of late was getting deaf, the left having gone deaf already. The gum covering the tooth was scarified according to my directions, but, as so frequently happens in these cases, it neither facilitated the full eruption of the tooth, nor resulted in an improvement to the hearing. This patient could give no history of his wisdom teeth, except that he never had had

pain with them. This is, as often happens, the effect of the tardy evolution of the teeth being negative, so far as local pain is concerned, but quite otherwise so far as the transmitted effect upon the hearing power of the ear goes. This patient's hearing for the watch was normal on the right side, though very indifferent for the voice, and was $\frac{7}{30}$ with one watch, $\frac{1}{40}$ with another on the left side.

I might quote many other cases that give support to my position as to the primary importance of recognising the wisdom teeth as concerned in the production of ear symptoms. The form of deafness that dates its inception to the period at which the wisdom teeth erupt, is in no way distinguishable from the ordinary chronic deafness described by Toynbee under the head of "Rigidity of the Mucous Membrane of the Tympanum," and by Roosa as "Proliferous Deafness."

As a variety of this affection, it is perhaps less often attended with tinnitus than the majority of these cases, but even this is a feature not sufficiently noticeable to justify independent classification.

As to treatment, I have not yet found any one drug upon which reliance could be placed, though in one case I certainly succeeded in effecting a cure by relying for the selection of the remedy upon the symptoms of the case. As to Pollitzer's inflation, it does no good whatever; neither does catheterisation of the tubes succeed; and as for post-aural blisters and intra-tympanic injections, they are a delusion and a snare.

Among the lessons we learn from this investigation is the great importance of attending well to the condition of the teeth in all cases of obscure chronic deafness, for surely if wisdom teeth in process of eruption can exercise such a baneful effect upon the ear as they are now proved to do, a like injurious effect is presumable on behalf of carious teeth, painful stumps, or ill-fitting artificial plates. I would, for this reason, insist upon the absolute necessity for the aurist to provide himself with a good dentist's mirror, and to examine the state of the teeth and gums in every instance of aural affection, be its nature what it may.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-Book of Practical Histology, with Outline Plates. By WILLIAM STIRLING, M.D., Sc.D., F.R.S.E. With 30 Outline Plates, 1 Coloured Plate, and 27 Wood Engravings. London: Smith, Elder, & Co. 1881. 4to. Pp. lvi. and 138.

THE distinguishing feature of this book is to be found in the plates. Professor Stirling thinks it a most important matter that the student should make drawings of all his microscopic objects, as by so doing he will be compelled to notice details which would otherwise escape him, and will have these details firmly stamped on his memory. Finding a great unwillingness to draw among the members of his class, he thought that he could greatly facilitate their artistic efforts by giving to each student outline sketches of the more important microscopic preparations, which outlines would require only to be filled in with pencil and colour. This plan he has followed during two sessions, and has found it most successful, each student having at the conclusion of the course not only his cabinet of preparations, but also a collection of drawings. It is the reproduction of these outline plates which, as we have said, constitutes the most striking feature of the text book.

It seems to us, in the first place, that it would have been better if Dr. Stirling had published the plates as an atlas separately from the text, for the quarto size of the volume as it at present stands is highly inconvenient, and makes it altogether incapable of being used at the work-table, where it would take up far too much room. Secondly, we should think that any student who could fill in the outlines would not have much difficulty in making the entire drawing, for the outlines are very bare, so that in many instances it is impossible to know what they represent, and in some cases they are even reduced to merely a circle or two parallel lines indicating the place on the page where the drawing is to be made. Thirdly, our experience is, that the time which students of medicine have to devote to practical histology is so short that if they learn

to cut their own sections and perform the other manipulations necessary in histological work, there will be very little time left for drawing. So far as we can gather, in Dr. Stirling's laboratory the sections are all cut by wholesale with the freezing microtome and served out to the students, who merely stain and mount them. In this way, of course, a considerable saving of time is effected; but whether the student is better fitted for future independent work by practising section cutting for himself or by mounting sections cut by someone else, and then making drawings of them, is a question which each teacher must decide according to his own experience.

The letterpress of the work is divided into two parts, which are pagged separately. The first treats of general methods, while in the second the special examination of each part is dealt with. The methods do not seem to differ much from those usually employed, and as they have all been repeatedly tested by Dr. Stirling they may be fully relied on. For hardening, a mixture of chromic acid, one sixth per cent., and methylated spirit is extensively used, but the proportions of the mixture are one to two, not two to one, as recommended by Dr. Klein. For certain objects a mixture of Müller's fluid and alcohol, which we do not remember to have seen before, is prescribed.

The staining fluids include almost all those of any real utility. Picrocarmine and logwood are most used, while purpurin is rejected as useless, and no formula given for its preparation. We can fully endorse all that is said as to the beauty of preparations stained with iodine green, but we have invariably found the colour to fade out in a few hours or, at the most, days. We are surprised not to find methyl violet among the dyes recommended for the skin. With this object it gives most beautiful and demonstrative preparations, which preserve their colour, even in balsam, for years. There is also no notice of Czokor's cochineal dye, which is very useful for class work. Ranvier's modification of Löwit's gold method is very much employed. The subjects of micrometry and the polarising microscope are altogether omitted.

In the special part there will be found fully given the best methods for the preparation of each tissue and organ, while the various points to be noticed in each preparation are carefully indicated. On the whole, we consider this book far in advance of other English works on practical histology, and we think that its inconvenient size is the only circumstance which will militate

against its popularity among students of all ages. To anyone who considers the matter more than the form we can recommend it most confidently.

The Hygiene and Treatment of Catarrh. Part 1.—Hygienic and Sanative Measures. Part 2.—Therapeutic Measures. With Forty Illustrations. By THOMAS F. RUMBOLD, M.D. St. Louis, U.S.A.: Rumbold & Co. 1881. Crown 8vo. Pp. 473.

HAVING already reviewed the first part, we have nothing to add to the observations already made except to deprecate the author's view (p. 59) that "a half an hour's sleep after dinner has usually a refreshing effect." We consider after-dinner sleeping a very bad, if not an apoplectic, habit. The first part is identical (including some typographical errors—*e.g.*, p. 128) with that already supplied to us, except that a hiatus in the paging is cured by the omission of the dedication and a new preface. In all other respects it appears identical.

The second part is devoted to the treatment of catarrhal disease, and begins with a description of the operating table and apparatus suitable for the office (the American equivalent for the "study") of a catarrhal specialist. These arrangements are neat, and characterised by American ingenuity. The instruments are then described, and directions given to use them without causing the nausea and reflex irritation incidental to handling the pharyngeal cavities. Bromide of potassium and the chloroform vapour douche are useful auxiliaries for this, but are not even alluded to. The author describes a spray-producer (for administering liquid sprays) of his own invention, and made by himself. It is practically the ordinary glass perfume spray which has been in our shops for many years, and is attached in metal to every carbolic spray machine. The author speaks of excision of the tonsils as "not a very difficult operation," and does it with a probe-pointed curved bistoury and a vulsellum (p. 373). We consider this a rather risky procedure, inasmuch as the least movement of the patient imperils the internal carotid artery—a fatal accident which actually happened in the hands of a very eminent surgeon in this city. The guillotine, which is so handy, so safe, and so simple, is not even mentioned. The author thinks that an elongated uvula will not cause tickling and coughing—not even if it reach down to the epiglottis. We fancy that few will agree

with him. He very properly, however, remarks that if it be necessary to cut it, the tip alone should be removed. He judiciously enlarges on the necessity of treatment to reduce laryngeal irritability previous to the removal of polypi. Of this treatment, however, he does not give any details.

Speaking of otorrhœa, he says (p. 344) that "this complaint, as well as the diseases affecting the eye, has for many years been erroneously diagnosed and treated by oculists and aurists as idiopathic diseases" (*sic*), "when, in reality, almost if not every non-traumatic affection of both these organs may be found to be the consequences of chronic inflammation of the nasal and pharyngeal cavities, and of the sinus connected with them." Alluding to this most amazing and extraordinary statement, Dr. Rumbold, in a footnote, anticipates that it will "draw some severe criticisms," which we have no doubt it will, unless the critics treat it as they treated George Primrose's paradoxes. Of these carping individuals, however, Dr. Rumbold majestically disposes by observing that he is writing not for them, but "for the critics of 1890." As one of the humblest of the critics of 1881, we respectfully deny the capacity of Dr. Rumbold or anybody else to write to that level, and freely admit our total incapacity to judge of it. We can assure him that if he live till 1890, as we trust he will, and in the meantime devote himself to the study and practice of medicine, he will then know a great many things which he does not know now. In the meantime we would express our belief that it would have been better if certain details of his work had been brought up to the humbler but more practicable level of the present day, for in our opinion some of them are considerably behind it.

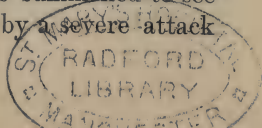
Rheumatism: its Nature, its Pathology, and its Successful Treatment. By T. J. MACLAGAN, M.D. London: Pickering & Co. 1881. Medium 8vo. Pp. 333.

FEW diseases are more common or more painful than acute rheumatism, and up to a very short time ago few have been less amenable to treatment. Plan after plan has been proposed and tried, and of most of them the best thing that could be said was that they succeeded as well (or rather as ill) as any other. Rheumatism was sufficiently dangerous and painful of itself, but was rendered the more anxious by the extreme liability to the occurrence of heart symptoms, ending in lifelong disease or early death—

in fact, with the exception of blistering the affected joints, which really was of service, there was practically no effectual cure for the malady except Dr. Warren's celebrated advice of "flannel and six weeks." If the patient escaped cardiac complications this was found effectual, with or without other treatment, and left the sufferer cured, but with a great liability to a return of the disease. For this reason we read with interest and expectancy Dr. MacLagan's treatise, in which he professes to relieve pain and check the disease in twenty-four or at most in forty-eight hours; and we rise from the perusal of the book with the consciousness that a great clinical problem has been solved, and that the research shadowed forth in the author's paper in *The Lancet* of five years ago has been now worked out.

Dr. MacLagan first considers the nature and causes of rheumatic fever, and rejects the idea that the lactic acid which produces the excessive acid perspirations is the cause of the disease. Rheumatism he considers to be a miasmatic or malarial affection strictly analogous to intermittent fever. The experiments of Klebs and of Tommasi-Crudeli have shown that the latter is due to the entrance into the body of a peculiar organism found in the soil of the Roman Campagna, and consisting of minute spores. This organism can be cultivated in proper organic fluids, and, inoculated into animals, produces intermittent fever and enlargement of the spleen, accompanied by the presence of an organism called the bacillus malariae. The preventive and curative influence of cinchona and its alkaloids are believed to depend upon its power of destroying the organism; in fact this view of intermittent febrile disease is now passing out of the region of controversy. Dr. MacLagan maintains that rheumatism is caused by a similar organism entering into a human system in a state of receptivity, and then multiplying and producing by its presence the well-known and distressing symptoms. The direct physical proof cannot be given, but the author makes a powerful case, and we feel convinced that whatever the nature of this *materies morbi* may be, whether bacillous or otherwise, it acts in the manner he describes. There is an amount of ebb and flow in rheumatism, but we have never seen exact periodicity unless in persons impregnated with the Roman fever, which gives a feature of exact periodicity to many diseases; and some curious cases of this type of rheumatism we have witnessed in the Santo Spirito Hospital in Rome. The germ theory is a very striking and interesting one, and attracted much

attention at the recent meeting of the International Medical Congress in London; Dr. MacLagan himself has written upon it, and more recently Koch, in his work on "Septic Poisoning, and Traumatic Infective Diseases." All the probabilities are in favour of it in rheumatism; but we cannot regard it as yet exactly demonstrated, although we somehow feel that it hereafter will be. The rheumatic poison being located in the body, our author shows that it attacks those white fibrous tissues which are most subjected to work or strain, and subsequently the synovial or serous membranes covering them. He divides the disease into two classes—locomotor and vasculomotor—but clearly proves that in both its nature and causes are similar. Dr. MacLagan's treatment consists of large and rapidly-repeated doses of salicin (the active principle of willow-bark), which he gives in doses of forty grains every hour or two hours, until the pain is relieved and the temperature lowered. He then continues the medicine at longer intervals of three or four hours, until the symptoms are entirely mitigated, and afterwards three times a day during convalescence. He maintains that the salicin kills the morbid organism, and we believe that it does so. Sometimes in the convalescent the symptoms return, and this, he says, is because all the poison has not been killed; and in that case he at once renews the large doses, *coup sur coup*. One of the triumphs of modern chemistry is the synthetic production of salicylic acid, which is much cheaper than salicin. This, in the form of a sodium salt, was recommended as a substitute, but Dr. MacLagan finds that it produces toxic symptoms unless given in small doses, while salicin can be given with impunity in almost any dose. Salicin is, moreover, a very good bitter tonic, and removes the debilitated condition so often found in rheumatic convalescents. The author illustrates his treatment with a phalanx of cases—many of the greatest severity—promptly and effectually relieved. We have ourselves tried these plans and can fully confirm Dr. MacLagan's statements; we have, however, been in the habit of adding to the salicin treatment by giving a strong dose of morphia hypodermically at the very outset, which we consider an improvement. Speaking of the subject of salicin, the author publishes a curious letter from Dr. Ensor, Surgeon to the Provincial Hospital, Port Elizabeth, South Africa, which was addressed to him shortly after the publication of his paper on "Salicin," in *The Lancet* of 1876. Dr. Ensor states that in the year 1861 he was summoned to see the wife of a Dutch Boer, who was prostrated by a severe attack



of rheumatic fever. He prescribed the usual remedies, and two months afterwards saw the woman quite well. On expressing his satisfaction thereat, she told him bluntly that his medicines had done her no good, but that she was cured by the Caffre shepherd who administered to her decoction of young willow-shoots, the favourite native remedy for this disease. This is a plan really worth trying, and might in proper season replace the salicin.

Dr. Maclagan's chapters on pericarditis, endocarditis, and myocarditis (or inflammation of the muscular structure of the heart), are particularly clear and interesting. This latter affection has been considered difficult if not impossible of diagnosis, but he considers the difficulty as overrated. He does not use the sphygmograph in the diagnosis of myocarditis, but we can assure him that it sometimes gives valuable information. The connexion between pericarditis and head symptoms is fully considered, and Stanley's and Andral's classical cases are carefully given. The work contains a good chapter on the connexion between rheumatism and certain forms of chorea, and an admirable one on that most dangerous form of rheumatism associated with great hyperpyrexia.

We heartily commend Dr. Maclagan's work to our readers as one abounding alike in scientific information and in suggestions useful for the everyday purposes of medical practice. We consider it one of the most useful contributions to medical literature that has appeared for some time.

1. *A Lecture on the Localisation of Diseases in the Spinal Cord, delivered before the Anatomical and Surgical Society of Brooklyn.* By EDWARD C. SEGUIN, M.D. Brooklyn, N.Y. 1880. Pp. 20.
2. *On the Early Diagnosis of some Organic Diseases of the Nervous System.* By E. C. SEGUIN, M.D. New York. 1881. Pp. 19.

1. These papers are reprints—the first from the *Annals of the Anatomical and Surgical Society of Brooklyn*, the second from *The New York Medical Record*. In the first the author describes briefly the principal system diseases of the spinal cord under the divisions—(1) diseases of the æsthesodic system, including the posterior horns and posterior columns; and (2) diseases of the kinesodic system, which include the remainder of the cord. In the first class he places posterior sclerosis and ascending secondary

degeneration; in the second, progressive muscular atrophy, atrophic spinal paralysis of children and adults, primary lateral sclerosis, and descending degeneration secondary to disease in the brain or cord. There is nothing new in the account of these conditions, which are now well known to all physicians.

2. In the second paper certain symptoms are given, by attention to which a comparatively early diagnosis may, in the author's opinion, be made in three diseases:—1. *Locomotor ataxy* should be diagnosed before the ataxic period by the peculiar pains, by the abolition of certain reflexes—chiefly that of the pupil to light and the tendon reflexes—and by the occurrence of paralysis of the ocular muscle. 2. *Paralytic dementia* may be foretold by tremors or fibrillary contractions in certain groups of muscles—specially those of the tongue, face, and arm—by a tremulous, thick, and vibrating speech, by inequality of the pupils, and by dementia, which often precedes the paralysis. 3. *Tumour of the brain* seated anywhere in the motor area is indicated by localised spasm, which after a time may pass into hemiplegic epilepsy, and is frequently followed by localised paralysis, neuro-retinitis or choked disc, and localised headache.

RECENT WORKS ON DISEASES OF THE SKIN.

Ringworm: its Diagnosis and Treatment. By ALDER SMITH, M.B., Lond., F.R.C.S. London: H. K. Lewis, 136, Gower-street. 1880.

THIS monograph covers nearly the same ground as Dr. Tilbury Fox's essay on Ringworm, published in 1878, but it goes into more detail, and gives in a very practical and instructive way a thoroughly satisfactory account of the diagnosis and treatment of this common and very troublesome affection. The special point urged by Dr. Alder Smith in respect of treatment is the value of the artificial production, by croton oil, of *kerion* (i.e., a stage of pustular inflammation) in effecting a certain and tolerably speedy cure in selected cases. For the details of his method, and the precautions to be taken, we must refer our readers to the author's little work, which is the outcome of an extensive and well-used experience of ringworm in all its forms. A careful perusal of its pages will well repay any practitioner who has to deal with a chronic and inveterate case of ringworm.

The Diagnosis and Treatment of Skin Diseases. By ROBERT LIVEING, M.D. 2nd Edition, enlarged. London: Longmans, Green, & Co. 1880.

IN our notice of the first edition of this concise and excellent handbook we suggested the propriety of enlarging its scope by adding the subject of treatment to that of diagnosis. This has been done, and well done, and the result is, that Dr. Liveing has written the best and most practical manual on cutaneous affections which has yet appeared. The book admirably supplies a want often felt and expressed, and the profession has not been slow to recognise its worth.

Atlas of Skin Diseases. By L. A. DUHRING, M.D. Part VIII. Philadelphia: Lippincott & Co. 1880.

THE diseases portrayed in this Part are the papular form of erythema multiforme, psoriasis on the back of the trunk, tubercular syphilide on the face, and tinea trichophytina on the head and neck. The representation of ringworm on the head is especially good, where all are excellent, and we have pleasure in again commending this Atlas to the notice of our readers.

On the Treatment of Nævi by Electrolysis. London: 1881.

DR. W. NEWMAN, one of the surgeons to the Stamford Infirmary, reports eight examples in illustration of the value of the treatment of nævi in certain cases by the continuous galvanic current. Nævi, which from their position are not amenable to excision or ligature, may be successfully dealt with by this method.

Archives of Dermatology. October, 1880; January and April, 1881. Editor, L. DUNCAN BULKLEY, M.D. New York: Putnam's Sons.

WITH the commencement of the seventh volume this year the Archives appear in an improved form, on larger paper and in more open type, and we heartily wish its energetic editor the success to which his enterprise is entitled. Among the communications we may single out for special commendation a paper in the October number, by Dr. A. Van Harlingen, which gives an exhaustive and very interesting summary and bibliography of those cutaneous affections which are brought about by the ingestion and absorption of certain drugs. The Archives of Dermatology is now the only

scientific journal published in the English language devoted exclusively to skin and venereal diseases, and it is so conducted as to be of real service to every practitioner.

Medical Report of the Armagh County Infirmary for the Year 1880.

By J. MANSERGH PALMER, Surgeon to the Infirmary.

FROM this brief Report we extract the following information:— During the year a total of 3,021 patients were treated at the hospital, being an increase of 81 over the previous year. Of these 730 were admitted into hospital; 65 of these cases were sudden accidents of greater or less severity, admitted without delay or any recommendation except the urgency of the case; 413 were surgical and 252 were medical cases. Of these, 213 were discharged cured, 373 were much relieved, 15 died, 45 were incurable, and 59 remained under treatment, making a daily average of 48 intern patients. Of the accidents admitted, 4 died almost immediately after admission, thus raising the mortality list from 11 to 15; a death also took place within twenty-four hours after an amputation of the thigh for chronic disease of the knee-joint. This was the only death after operation during the year, except in the case of an old man of eighty years of age from whose lip Mr. Palmer removed a cancerous mass, making the mortality after operations 2 per cent. The operations as a rule were carried out according to Lister's method under a spray of carbolic acid, chloroform being the anæsthetic used in each case. Towards the close of the year the Governors introduced wire-woven mattresses in two of the wards. These have proved most satisfactory, and are much appreciated by the patients, besides conducing to the general cleanliness and comfort of the wards in which they have been placed.

We may be permitted to express a hope that future Reports of the Armagh Infirmary may be somewhat fuller as regards details and more elegantly brought out than the present one, which is concise to a fault and very shabbily got up.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.^a

By RINGROSE ATKINS, M.A., M.D., Medical Superintendent,
District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

On the Present Status of the Question of Non-restraint in Germany.—At a meeting of the Society of German Alienists, held at Heidelberg, an interesting discussion took place on the above subject, Profs. Westphal and Nasse being the chief speakers, the former being absolutely in favour of complete non-restraint, the latter holding modified views. It may be interesting to quote a *résumé* of the discussion, which has been translated in the pages of *The Alienist and Neurologist* by Dr. E. W. Saunders. Prof. Westphal, in opening the discussion, said that forty years have passed since Conolly's reform began, and still the question has not been definitely settled. However, those who know with what difficulties any practical reform has to contend will understand this. He would touch upon only one point in reference to the causes which led to the opposition against Conolly's reform—a dark page in the history of practical psychiatry. The motive of Conolly's effort was *humanity*, for the treatment of the insane at that time was deplorable in the extreme. In the interests of humanity he demanded the abolition of mechanical restraint. Now, there were many alienists in Germany as humanely disposed as Conolly, who could not yet coincide with his views. It was natural that they should incur the suspicion of a want of humanity, and this unjust imputation embittered them. According to a psychological law they, finding that they were unjustly treated by their opponents, made in return captious opposition to them and

^a The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

their principles. It appeared as if the advocates of non-restraint had at the same time become the sole champions of humane treatment. This is to be deplored, and at the present day in Germany at least the question is simply as to what is the best means to be adopted in the treatment of certain *classes* of patients, and it should be discussed on its merits alone. We must not forget that the mechanical restraint of the insane was a measure introduced by the laity and not by the profession. When medical science first turned its attention to the insane it found them fast bound—bound by the laity for purposes of self-protection. Medical science had shown more and more that restraint was unnecessary, and that it was also injurious. He would not feel himself called upon to reply to anyone who would now claim that it was salutary in its effects upon the patients.

The question may now be stated as follows:—

1. Is it possible to bring the treatment of the insane to that state of development when all mechanical restraint may be dispensed with?

2. Is the dispensing with all mechanical restraint advantageous to the treatment of the insane, or are there such disadvantages inseparably connected with it that it would be better not to introduce it?

The question can only be decided by the test of experience, and he (the speaker), did it not seem too arrogant, would deny the right to anyone to express an opinion unless he had made an honest and energetic attempt to do away with restraint in his practice.

It is hard to fight against prejudice, indolence, ill-will, in those who ought to be our helpers; far harder, however, is it to fight against one's own false conceptions and timidity. Another condition he would make is that the experiment should be made strictly in the spirit of Conolly's work. What a farce, for instance, was that which Hofrath Steinmel was guilty of when he published the results of his trial of the Conolly system, the particulars of which he had learned from a non-medical officer of an English asylum. He (the speaker) was astonished that Laehr should have referred to this article in his attack on the non-restraint system. The publications of recent date upon the subject are rather scanty. In 1868 Stoly in Halle (Tyrol) said that he considered that the possibility of dispensing with mechanical restraint in the treatment of the insane had been proven by his

experience, but that the question whether the general introduction and practice of the system of non-restraint is desirable or possible he must leave to the future to decide. As champions of the system in Germany we find L. Myer, Griesinger, Gudden, Cramer (and the speaker himself), while others have adopted the system, though they have not published their results. The speaker then gave a partial list of the general asylums in which perfect non-restraint had been adopted, amongst which may be enumerated those at Hamburg, Gottingen, Berlin (Charité), Halle, Marburg, Heidelberg, Eberswalde, Keppenheim, Werneck, Munich, and Alt-Scherbitz, besides all the asylums of Switzerland. Wherever non-restraint has been carried out there has never afterwards a doubt been entertained of its advantages. If he might be so bold as to speak of his own experience, he would say that having served as assistant in the Charité under the old system and then under the new, to which he had become converted, he would now never again employ mechanical restraint. He knew no indication for the application of the jacket. The difference in the results obtained under the two systems was simply enormous. The only exception, allowed too by Conolly to be made, was in the case of surgical patients, but even here one must use mechanical restraint after due consideration. The change in sentiment on this subject that has taken place in Germany might be expressed as follows:—Formerly the rule was that noisy, troublesome, &c., patients should be put under mechanical restraint. Latterly there has been a growing tendency to limit the application of mechanical means as much as possible, so that now the rule is exactly reversed, and it is taken for granted that noisy, troublesome, &c., patients should not be restrained by mechanical means from using their limbs freely, unless in exceptional cases. Opinions are still divided as to whether it is best to dispense with mechanical restraint altogether (except in surgical cases), or to reserve its employment still for certain classes of cases. Those who have in practice done away with restraint altogether believe that neither necessity nor advantage justifies the partial retention of restraint, and that it is better in every respect to dispense with it altogether. The speaker declared that it was an undisputed fact that Conolly and his followers exercised a real and determining influence in bringing about this change of opinion, and that this should be generally acknowledged. He himself felt confident that, judging from its progress in the past, the complete non-restraint system would be

adopted in the future. Of course the necessary conditions must first be fulfilled, the most important of which are that the asylums should not be overcrowded and that the patient should be under constant medical supervision.

Dr. Nasse agreed with Westphal in the main, although he objected to the dignifying of non-restraint by assigning it the position of a "system." Before Conolly's time humanity had been introduced into the treatment of the insane; the distinguishing feature of his system was the abolition of all mechanical bodily restraint. Formerly mechanical restraint was the kind chiefly employed, and it is undeniable that its abuse had become very great, against which naturally there came a reaction, and it is well known that to this reaction we owe many and great improvements in the treatment of the insane. However, the unqualified adoption of non-restraint seems to be fraught with danger, and especially in England, where through the interference of the laity the liberty of physicians has been infringed upon, and the bad results are already apparent. It is to be feared that lack of energy in treatment has resulted, and that non-restraint proves to be only a name. For the last fifteen years he has abolished mechanical restraint in his practice as far as practicable, and declares himself a decided advocate of the method; still he cannot but name a number of classes of patients who must be restrained by mechanical means, and this upon the basis of his experience in Anderaacht during the last few years—to wit, surgical cases and eye cases, persistent self-ambulators, excessive masturbators, especially females; further, those who persist in standing until their feet become oedematous; cases of excessive anæmia that need the horizontal position; those that kneel persistently until the skin over the knees becomes gangrenous; further, cases of excessive motor disquietude with fever—for instance, cases of melancholia agitata and those of acute delirium of male paralytics (securing in bed, use of wet blanket); lastly, where the patient beseeches to be restrained from fear of injuring himself. Feeding with a bougie may be also considered restraint (?), but still he resorts to it in cases of obstinate refusal of food. Also koprophagesis needs restraint, though it is doubtful whether it is proper except in cases of excessive filthiness. Finally, it cannot be denied that there are cases which wear out the patience of the attendants, and which are so dangerous to them that restraint must be employed. In such exceptional cases he considers the failure to employ mechanical

restraint as inhuman, for it is the duty of the physician as well as to the patient's interest to employ it. The speaker concluded by quoting the sentiments of Yellowlee's—"Non-restraint in so far and so long as it is to the interest of the patients."

Snell asked information on the subject of "Isolation." The advocates of non-restraint in England claim that they isolate the patients only at night, and then not very strictly. He believed that these were theories which no one ever put into practice. Filber has not used the jacket since 1870. In reply to Nasse he would say that it is not necessary to humour the patients—they can be disciplined, but should not be harassed; it is necessary to individualise. Even surgical cases—and most of those mentioned by Nasse—can be treated without the jacket by means of constant watching. Forceful feeding is not restraint. Conolly was right in objecting to isolation; it need not be employed even in the case of homicidal maniacs if they are put with well persons at first, and only later allowed to be with other patients. Brosius wished to know what substitute had ever been found for the jacket, and what *role* do drugs, baths, and nourishment play in the treatment. Everyone is agreed that non-restraint is to be aimed at as far as practicable. He has banished the jacket, but its place has been taken by cells and walled enclosures. It has not been proven that baths are of any service. According to his experience a generous diet is the best substitute for the jacket. Besides, he could not understand how it is possible to treat the cases enumerated by Nasse without restraint. Excitable patients cannot be held day and night by attendants (in fact such attendants cannot be found), and to narcotise them with morphia is worse still.

The Asylums of Europe.—Dr. George M. Beard has recently published a little *brochure* with this title, which he read before the National Association for the Protection of the Insane at New York. It contains the record of his personal experience derived from visits which he paid to a number of asylums in these countries and the Continent during the summer of 1880, and he thus formulates the conclusions at which he has arrived under six heads:—

1. In the methods of supervision, and in the general care of the insane in public and private asylums, Great Britain has been easily first of all nations. Next to Great Britain, he remarks under this heading, comes Germany, which however is so fast improving that she soon may be on an equality with Great Britain.

In the British Isles, Scotland, on the whole, takes the lead of England and Ireland; and it may be positively affirmed that, on the average, the insane in Scotch asylums are better treated than in any other country. Next to Germany comes France in order of merit.

2. Some method of governmental supervision of the insane appears to be universal both in Great Britain and on the Continent. Of the four great countries, he says, the United States appears to be alone in compelling the insane to depend exclusively upon their attendants, and superintendents, and local trustees.

3. In the best asylums of Europe mechanical restraint is reduced to a very small percentage, and, instead of restraint, labour is employed as a therapeutic agent.

4. In the best asylums of Europe the insane are treated much like children. They are allowed to come and go as they please and as we please, all the time watched and guarded lest they wander or run away, or do injury to themselves or others.

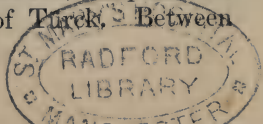
5. The best asylums of Europe are not enormous or imposing buildings, but a series or collection of small or moderate-sized unimposing cottages or houses.

6. The methods of treating the insane in and out of asylums that have been most satisfactory in Europe can and will be introduced into the United States, in spite of and in the face of certain practical difficulties.

II. ANATOMY AND PHYSIOLOGY OF THE BRAIN AND NERVOUS SYSTEM.

The Variable Decussation of the Anterior Pyramids of the Cord.—Dr. Landon Carter Gray, of Brooklyn, in a paper read before the Anatomical and Surgical Association of that city, thus refers to the more recent researches of Flechsig on this subject and to the objections advanced by Brown-Séquard.

Until within a short time anatomists have assumed that the decussating fibres were always of the same number relatively to the non-decussating fibres. We are, however, indebted to Flechsig for showing that this proportion is extremely variable. He found two extremes:—In the one, all the fibres of the motor tract entered the lateral pyramidal columns of the opposite side of the cord, there being no columns of Türck; in the other, only 10 per cent. passed to the lateral pyramidal columns, 90 per cent. descending at the same side in the columns of Türck. Between



these two extremes all manner of variations may exist. He gives the following table of the variations:—

1. Total decussation (cases of the entire lack of the columns of Türek).

2. Semi-decussation of one pyramid, with total decussation of the other—

(a). Semi-decussation of the right pyramid.

(b). Semi-decussation of the left pyramid.

3. Semi-decussation of both pyramids—

(a). Less than 50 per cent. of each pyramid or of both remains non-decussated.

(b). More than 50 per cent. of each pyramid or of both remains non-decussated.

This discovery of Flechsig disposes of what is seemingly the most insurmountable objection to the doctrine of cerebral localisation. M. Brown-Séquard has collected, with his accustomed energy and enthusiasm, a large number of cases to prove that lesions on one side of the brain will sometimes produce paralysis of the same side of the body; and assuming, in a by-gone fashion, that all motor fibres decussate, he believes that he has also proved the untenability of the doctrine of cerebral localisation. It still remains for M. Brown-Séquard to prove that the motor tracts of his cases did not vary, as Flechsig has shown us they may do (*Alienist and Neurologist*). In an interesting lecture "On Recent Progress in the Pathology and Treatment of Cerebral Paralysis," published in the *British Medical Journal*, June 4, 1881, Dr. Julius Althaus thus refers to Flechsig's work in this direction:—"To clinical observation and pathological anatomy, in which of late years more especially the French school of La Salpêtrière has done excellent work, we must however add, as an important link, the study of the *evolution of the nervous system in the fœtus*, which has recently been pursued with the most gratifying success in Germany by Dr. Flechsig." "It was in the study of the successive and gradual formation of the myeline sheaths of the central nerve fibres that Flechsig found a new and important means of recognising peculiarities of organisation in the central nervous system where other modes of examination appeared to encounter insuperable difficulties. He has shown that certain fibres and strands of fibres which in the adult are so intimately welded together that they appear identical may, during certain phases of embryonic life, be plainly distinguished from each other, inasmuch

as some of them are still naked axis cylinders, while others have already become covered with a sheath of myeline. By noting this fundamental difference it is possible to trace in the medullary masses of the brain and cord of the fœtus certain peculiarities which later in life disappear altogether. Since, then, in the different periods of intra-uterine existence, some strands are seen to follow invariably peculiar laws of evolution, we are justified in assigning to them a separate place in the general plan of arrangement of the nervous centres. Fibres the continuity of which is undoubted have been found to become provided with their myeline sheaths at the same period of fœtal life, while others, apparently continuous with or contiguous to them, and which in the adult can no longer be distinguished, only become fully developed months later. The study of evolution, therefore, shows such fibres and strands to be distinct from each other, and has served as an important factor in determining the relations of certain portions of the cord to other tracts in the medulla oblongata and the brain. The main body of fibres appertaining to equivalent centres is provided with medullary sheaths at the same period; and where in this respect differences amounting to several months are encountered, any systematic equivalence of such strands can no longer be assumed. It has also been shown that the evolution of those strands of the spinal cord and medulla oblongata which are in direct connexion with the higher cerebral and cerebellar centres takes place, without exception, at a very late period of fœtal life; and this fact alone throws doubt on the assumption that the posterior longitudinal strands have any definite connexion with cerebral centres. These considerations are sufficient to show what an important aid the study of evolution must afford to the pathological anatomy of what is now known as the secondary degenerations, in which we meet with considerable alterations in the morphological characters of certain strands of fibres throughout their course in the cerebro-spinal axis. In some instances, indeed, Flechsig is inclined to think that evolution furnishes more perfect data than pathology. At any rate it cannot be denied that where both lines of inquiry yield the same results these are rendered much more reliable. The specimens on which Flechsig founds his conclusions have been prepared partly with perosmic acid, which gives a black coloration to the fully-developed fibres, but leaves those without a sheath of myeline quite clear; and partly by means of a new mode of impregnating the nervous centres with

gold, which appears to furnish the most perfect preparations. If sections which have otherwise been most carefully prepared be left for a short time in a half per cent. solution of perchloride of gold the white matter is seen to assume a dark violet colour, and those nerve fibres which already possess a sheath of myeline are more deeply tinged than others. All the other parts appear light and transparent or have been destroyed altogether, whereby the appreciation of the points at issue is wonderfully facilitated." He subsequently proceeds to quote the observations of Flechsig which are detailed above.

Betz on the Microscopic Structure of the Cortex Cerebri.—Prof. Betz (*Centralblatt für die med. Wiss.*, 1881, Nos. 11, 12, and 13) has endeavoured by his histological researches to verify the statements of Hitzig and Ferrier respecting the localisation of functions in the cortex cerebri. In 1874 he pointed out that the "motor zone" contained large cells, to which the name of giant cells was given, though they had nothing to do with the giant cells which play so large a part in the modern descriptions of new growths. He says the cortex cerebri, as is well known, is composed of five layers, as follows:—1. A layer of neuroglia, containing small granular nuclei. 2. In addition to the preceding there are pyramidal cells of medium size, with the apices directed towards the periphery and their bases towards the central parts. 3. Very large pyramidal cells, which are, however, fewer and scattered. 4. Small round or elliptical cells, constituting the "nuclear layer." 5. Special fusiform cells.

This is the typical arrangement, but the various regions show differences. Thus, Meynert has shown that in the neighbourhood of the calcarine fissure the third layer is absent, and the structure in this region consists of two nuclear layers separated by a layer of nerve fibres, on which lie by pairs large pyramidal cells. The hippocampus also is composed principally of the elements of the third layer. The claustrum consists of elements of the fifth layer; the ascending frontal and the paracentral lobe contain "giant cells" grouped in nests.

He has examined 5,000 preparations from brains of all ages, and has come to recognise, in addition to the above, certain other regional peculiarities.

The ascending frontal convolution in its upper two-thirds presents the following characters:—At first, just above the fifth layer, there are large cells, single or united by pairs, and at great

intervals one from another; higher up these cells are grouped in threes and fours, and the intervals are less; higher still the groups are formed by a large number of cells, not less than four, often six or seven. In the third layer they present an uninterrupted series. In the second they are scattered as in the fourth. Near the paracentral lobe this series is again interrupted, so as to form groups or nests. Nearer the lobe the cells become larger, until they pass into the condition of the true giant cells of that region. These latter are never found in the ascending parietal.

The convolution of the corpus callosum is composed at its origin beneath the anterior part of the lamina terminalis almost exclusively of two layers, the superior and the fifth; while the cells of the latter, instead of being parallel to the base of the convolution, are perpendicular, like the cells of the third layer elsewhere, and they are two or three times larger than the ordinary fusiform cells of the third layer. In the middle of this convolution the nuclear layer (fourth) and the layer of pyramidal cells reappear. In the posterior third three new layers occur. The first, lowest, is composed of longitudinal fibres, forming an arch over the upper surface of the corpus callosum; the second layer, grey, is formed of small round cells; the third, equally grey, contains pyramidal cells and also large fusiform cells. These three layers become more and more important towards the extremity of this convolution, but never involve more than its inferior and internal portions. Where the convolution of the corpus callosum passes into the hippocampus the layer of large cells suddenly increases and goes to form the internal cellular layer of the hippocampus. The nuclear layer above described becomes the well-known nuclear layer of the hippocampus, and the layer of white fibres adjacent to the corpus callosum passes to form the reticular white matter of the hippocampus. *The extremity of the hippocampus* and the terminal part of the temporal lobe present the peculiarity that the pyramidal cells of the third layer are found immediately beneath the first, and are arranged in groups, like balls of thread, whence they have been named by Betz *cortical glomeruli*.

The *third frontal convolution* is separable into three parts, the most posterior extending from the ascending frontal convolution to the perpendicular branch of the fissure of Sylvius; the middle portion extends from this limit to the beginning of the orbital portion of the convolution; and the third, situated on the under surface of the brain, extends from the extremity of the convolution

to the island of Reil. The first portion contains in the third layer pyramidal cells of larger size than are found elsewhere in the frontal lobe; and in brains of persons of advanced age there may be giant cells of small size which pass into the extremity of the ascending frontal. The second portion contains in the second and third layers long slender pyramidal cells, grouped together and with their processes directed obliquely. The third portion contains chiefly cells on the type of the fifth layer and of the size of those of the claustrum, arranged generally perpendicularly to the transverse section of the cortex. Sometimes there are some cells of the third layer, but they are very small. The *island of Reil* contains numerous small cells like those of the fifth layer.

The *lingual lobe* possesses eight layers from without inwards—1, the layer of neuroglia; 2, very small pyramidal cells; 3, nuclei; 4, horizontal fibres; 5, nuclei; 6, horizontal fibres; 7, triangular pyramidal cells; 8, fusiform cells.

The *fusiform lobule* has an analogous structure, but as it approaches the occipital lobe the seventh layer disappears, and at the end of the descending gyrus all the layers unite to form a homogenous mass of nucleated cells and a little row of fusiform cells.

The external portion of the *occipital lobe* has the second and third layers of the pyramidal of the ordinary type, and here and there there are cells of large size.

The *angular gyrus* has an analogous structure, but the cells of the third layer are much larger than in the occipital lobe.

The *ascending parietal convolution* and *superior parietal* and *inferior parietal lobules* have the ordinary typical structure.

The three *temporal convolutions* are distinguished by the thickness of the fifth layer and by the presence of small cells in the third.

The *parieto-temporal* and *transverse temporal* convolutions are of the ordinary type.

The *quadrate lobe* has near its upper border, in the third layer and above the fifth, two rows of pyramidal cells.

The *frontal convolutions*, excepting the lowest, already described, have a very thick third layer of large pyramidal cells which almost obliterate the fourth layer.

The *straight gyrus* is very like the convolution of the corpus callosum.

In the *female* the third layers in the frontal and parietal lobes

are thinner and the pyramidal cells fewer, while in the occipital lobes the same layer presents larger and more numerous cells.

In the *embryo* at seven months the cortex is composed of only two layers, the first and fourth, and pyramidal cells may be seen only in the hippocampus.

In the *new-born child* the cortex is much the same, but the hippocampus has all its elements as visible as in the adult, and in the paracentral lobe there are some giant cells, which may be distinguished by their pyramidal form and three prolongations. At the age of *six weeks* the pyramidal cells of the third layer may be observed in several convolutions.

In *children of eleven to twelve years* the giant cells have still few prolongations, the apical prolongation is still short and pale, and no basal prolongation has been observed. In the case of an idiot (Motté) the frontal lobe was composed of irregular slender pyramidal cells, in which it was impossible to distinguish the five layers. The giant cells of the ascending parietal and paracentral regions were narrow, oblique, and furnished with few prolongations, the basal prolongation being absent. The parietal and occipital lobes had the nuclear layer well developed, while the pyramidal layer was small, thin, and contained chiefly the small pyramidal cells of the second layer. The *hippocampus* had its white substance very well developed, its characteristic cellular layer was small, as was also the nuclear layer.

With respect to the origin of the olfactory nerve, the olfactory tubercle contains a first layer of small pyramidal cells, few in number, a thick layer of nuclei and large cells in the fifth layer, like those in the convolution of the corpus callosum, and the same region contains a grey layer consisting of oval ganglionic cells of large size and furnished with processes, recalling the cells of the cornua of the spinal cord. In the brain of the idiot (Motté) this grey layer was much better developed than usual. This grey layer may be called the central ganglion of the olfactory tubercle. These facts afford an anatomical confirmation to the researches of Ferrier. Convolutions are organs separated by sulci or fissures, in which lie the blood-vessels supplying them. The larger the convolutions the greater is the development of the particular organ, and the more numerous the convolutions the greater is the specialisation of function.—(*London Med. Record*, July, 1881.)

Tendon Reflexes and their Relation to Muscular Tonus.—In the *Archiv für Physiologie*, 1880, Heft 3, Prof. Senator communicates

some new researches on this subject. He has endeavoured to localise the strand in the cord, upon the integrity of which the reflex depends. He used rabbits—an animal in which the patellar reflex is very marked. The animal was narcotised, and after careful exposure of the cord delicate incisions were made with a very narrow knife. The reflex was examined after recovering from anæsthesia. The cord was subsequently hardened in chromate of potash, and cut with a microtome.

The statement of Tschirjew that division of the cord between the fifth and sixth lumbar vertebræ prevents the reflex, is readily confirmed. It is further found that half-sided section of the cord intercepts the reflex merely in the extremity of the operated side. There is hence no decussation of the fibres concerned. Section of the posterior columns or their destruction in the lumbar part of the cord does not interfere with the patellar reflex. Occasionally a slight exaggeration is seen, but this may occur after a variety of spinal injuries. Section of the lateral column between the fifth and sixth lumbar vertebræ prevents the reflex contraction of the quadriceps muscle of the same side. Some especially successful experiments seem to show that it is mainly the central portion of the lateral column which is here concerned. Division of the posterior cornua does not at all interfere with the tendon reflex. In many instances it is found that a successful injury of the cord may stop the reflex on one side without depriving the animal of the use of the limb. This result, however, is not constant. In other instances it is also seen that the leg in which the tendon reflex could no longer occur was more apt to be involved in general reflex movements. The main points in these researches are also confirmed by experiments on dogs.

These results form a strange discord with the usually accepted clinical notion that the tendon reflex in man depends upon the integrity of the posterior columns. They agree, however, with all experimental results, all of which prove that in the lumbar cord the lateral columns contain both the sensory and motor fibres.

The author hereupon criticises the researches of Tschirjew on muscular tonus, and agrees with him on the whole, notwithstanding some polemical remarks. He mentions, by the way, the following interesting observations:—He found that the tone emitted by the patella tendon is distinctly lowered in pitch by any operation upon the nerves or spinal cord which prevents the occurrence of the tendon reflex. This is decided proof that the tension of the

tendon is diminished.—(*Am. Journ. Nerv. and Ment. Dis.*, Oct., 1880.)

Movements of the Brain.—The following are the conclusions deduced from a critical review of the literature of the movements of the brain by Dr. Vaillard in the *Revue Mensuelle de Médecine et de Chirurgie*, Aug. 10, 1880 :—

1. The movements of the brain are of two kinds—the one kind in relation with the beat of the heart, the other with the respiratory movements. There are, besides these, less rapid variations in volume hardly perceptible, that appear to be connected with rhythmic changes in the tonicity of the small vessels.

2. Calm and easy respiration barely modifies the tracing of the variations of volume of cardiac origin. Exaggerated respiration *apparently* suppresses the pulsation of cardiac origin, and produces an augmentation of volume during expiration, and a diminution during inspiration.

3. Effort causes a very notable augmentation of the volume of the brain to the condition that follows a strong inspiration.

4. Compression of the jugulars at the base of the neck causes turgescence of the brain.

5. Compression of the carotids produces an absolute diminution of the volume of the organ.

6. The vertical position causes a veritable aspiration on the brain, which sinks down much more than it would from its mere weight alone.

7. Elevation of the superior members favours the afflux of blood in the brain, and indirectly increases its volume.

8. Application of the Junod's boot to a leg, although causing evident disorders of cerebral anæmia, does not diminish the volume of the brain very appreciably, on account of the compensatory afflux of the cephalo-rachidian fluid.

9. The relations that may exist between the circulatory modifications of the brain and the phenomena of intellectual labour are not yet well determined.

[To be continued.]



PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-THIRD ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.
WILLIAM ROE, M.D., Honorary Secretary.

Saturday, June 11, 1881.

The President, DR. BYRNE, in the Chair.

Delivery through the Perinæum. By ROBERT W. HARLEY, L.R.C.P. and L.R.C.S., Edin.

THE patient who is the subject of this paper is about twenty-five years of age, of very slight figure and small make. She was married in April, 1879, and in the following November was operated on, at my request, by Dr. Roe for stenosis, from which she made a good recovery, and in the May following, or about six months after it, she conceived. All the time previous to the operation, and for some time subsequent to it, her husband found it impossible to effect coition, and this he attributed to the presence of the pubic bone, which was very flat and low, and he expressed considerable disappointment that Dr. Roe had not removed this cause of obstruction, and that "that bone" was there still! To this same bone I believe is to be attributed the accident I am about to relate.

On the 27th of last February, while visiting next door to her, I received a by no means urgent message requesting me, as I was so near, to call; and on doing so was told that her labour was setting in, and that I would probably be sent for before night. I saw her then, and found she had had some slight pains for about six hours previously, but she did not complain much or consider herself very ill. On examining her, I found the os fully dilated and the head very low down. While

examining her a strong expulsive pain came on, rapidly followed by others; the rectum was distended, and the perinæum rapidly thinned. All the force seemed directed backwards, and during one of these pains, and while I was endeavouring to direct the head forward, the extreme force of the uterine action meeting with the low pubic bone as a resisting force, which prevented the sweep forward, drove the head right through the perinæum in its posterior third. Delivery was rapidly completed through the rent, and the placenta followed through the same opening. There was about an inch wide of perinæum in front, and the laceration extended backwards till it reached the sphincter ani, but did not injure it.

I brought the parts into apposition, and first passed a curved needle, with a carbolised catgut suture through the anterior flap *or* the posterior commissure, and then through the anterior wall of the rectum, bringing it out at the verge of the anus; then I introduced two lateral sutures, and had all the wounded surfaces in perfect apposition; and for a few days the wound looked as if it were about to heal, and the patient herself was doing well. She had a grain of opium every night to keep the bowels quiet. On the fifth day she had a slight rigor; the pulse and temperature went up. She complained of pain in the bowels, and the lochia became offensive in odour. I was obliged to wash out the vagina with Condy and hot water and to give her a turpentine enema. From this time I gave up any hope of the wound healing by immediate union; and, as the extensive granulating surfaces were absorbing lochial poison—by Dr. Roe's advice, who saw her with me several times—I had them smeared freely with carbolised oil, and a piece of lint steeped in it kept constantly between them. The frænum, or anterior flap of perinæum, became greatly reduced by absorption, and on the 27th of March, just one month after the labour, I divided it, it being then little more than a tape-like band. The perinæum filled up better far than I expected, is now perfectly healed, and she suffers no discomfort from it—in fact, I have seen many not as perfect. She had a very considerable fever, from which she convalesced well, and is now in perfect health, and actively employed; the child was a large healthy male, and is also well.

This accident is fortunately of very rare occurrence. Dr. Ramsbotham saw only four cases in his large experience. He calls it "Bursting through the Perinæum;" in three of the cases mentioned by him it was, unlike mine, the result of long-continued labour, and rigidity of the perinæum, in the other case it was due to the giving way of an old cicatrix, the result of a slough. Dr. Churchill evidently never met with this form of injury. In speaking of it he says it has been mentioned by various authors, whose names he quotes, and he adds, "A case occurred in this city." Dr. Kidd has informed me he never saw it. Dr. J. C. Reeve, of Dayton, Ohio, has recently reported a case occurring in a woman aged

thirty-three, on her third delivery, and he "claims" that this is the only case on record occurring in a multipara, but he errs in that, as Dr. Ramsbotham's fourth case was on the birth of her second child, the cicatrix being the result of a slough of the vagina, after the birth of her first. He (Dr. Reeve) has collected a list of thirty-five cases of this accident, including those I have quoted, and I believe he has ransacked all the literature of all the continents to procure them. He describes his case as one of "precipitate labour"—in my experience a most appropriate designation. He says the woman was out of her bed, over the vessel, when she was taken with a violent pain, and had scarcely time to get back on the bed before the child was born. She was not aware for three days that anything was wrong. The rent began on the right side, near the junction of the upper fourth with the lower three-fourths of the labium, followed the outer boundary of the labium downwards, and crossed the perinæum to the rectum; both the anal sphincters were divided, the laceration extending upwards, quite an inch and a half. The part of the perinæum remaining intact at the posterior commissure, and along the lower part of the right labium, was about the thickness of a man's thumb. Dr. Reeve subsequently employed the deep operation for the cure of this, and almost succeeded, a slight fistula only remaining, when he lost sight of the case. She had only a midwife in attendance at the labour.

Dr. Roe has suggested to me that if I had divided the perinæum at each side in the line of the labia, verging towards the centre, there would have been no such accident, and the incised wounds would have healed rapidly, being kept in apposition by the natural folding of the parts; and I find that Dr. White, of Buffalo, has also recommended this course; but in the case I have related it was so sudden and so unexpected, and the labour was so "precipitate," I was quite unprepared to think of any measure for averting it. In the cases reported by Ramsbotham I have no doubt the employment of these incisions would have prevented the accident, as the cause was rigidity, and long-continued pressure—pressure from within and without; he himself, in one case, pressing the perinæum for two hours unceasingly. In my opinion this pressure on the perinæum is very injurious, and most productive of the result we wish to avoid, paralysing its elasticity, and checking its circulation. I also believe that too much pressure on the head from behind forwards, especially if the pubis is flat or low, is very likely to produce this accident.

I believe it is the accepted practice now to employ sutures at once in case of severe rent. I invariably do it myself, and find it very satisfactory in its results; for even though the outside raphe of the wound may appear to be open, deep coalition of granules will have formed, and the close approximation of the freshly-wounded surfaces—more or less

agglutinated from the first by the fresh blood—are more likely to escape the ill effects of the lochia.

The PRESIDENT.—This accident is a very unusual one. It is very difficult to conceive how the laceration occurs, and I do not think the explanations which have been given are satisfactory. I think Dr. Harley was quite right in performing the operation. He mentioned that Dr. White and Dr. Roe suggested a bilateral incision of the perinæum for the purpose of avoiding laceration. The late Dr. Beatty was the first to recommend that. I remember his reading a paper on the subject.

DR. RUTHERFORD KIRKPATRICK.—While I was assistant at the Rotunda Hospital I saw two cases of laceration of this kind. One of the persons in whom it occurred was a young unmarried female only sixteen years of age. The child was completely expelled through the perinæum. She died in two or three days afterwards of sloughing and puerperal fever. The other case was that of a woman, about thirty-five years of age, also unmarried; it was her first child. The head was presenting with the face towards the pubis; the perinæum was distended, and a central perforation took place. The child, a very large one, was expelled through the perinæum, leaving the anterior part intact, and not injuring the sphincter of the anus. The woman remained in hospital for some months, and by treatment and cleanliness the wound was healed so completely that no mark of the rupture remained. No sloughing took place. The sacrum was rather straight, and that was said to have been the cause of the laceration. In neither of these cases was any operation of stitching performed, either at the time or subsequently.

DR. MORE MADDEN.—The accident dealt with in Dr. Harley's very interesting paper is one of the rarest occurrences in midwifery practice. In the only case of central laceration of the perinæum which I saw when I was assistant in the Rotundo, the patient was brought in with the arm of the child protruding through the perinæum, midway between the fourchette and the sphincter ani. Dr. Harley has said that lacerations of this part may, in some cases, be obviated by incising the perinæum bilaterally, as has been suggested by Dr. Roe. I should be very sorry to deprive Dr. Roe of any of the credit which is due to him for the many valuable practical suggestions for which we are indebted to his ingenuity, but at the same time I may mention, that upwards of a hundred years ago Sir Fielding Ould recommended the incision of the perinæum with a pair of probe-pointed scissors, to prevent these lacerations; and I have myself, for many years, practised a somewhat similar procedure in suitable cases, as I mentioned in a paper which I published in the *American Journal of Obstetrics*. But previously to that Dr. Beatty had also called attention to the prevention of lacerations by a perineal incision.

Dr. Roe, however, has proved the superiority of the *bilateral* incision of the perinæum for this purpose, and I can bear testimony to the fact that we may very often succeed in preventing these lacerations by making an incision at right angles to the threatened rent. With regard to treatment, there can be no question that the great majority of instances of slight laceration of the perinæum require no operative treatment. If it be more than ordinarily extensive, the introduction of a couple, or more, as the case may require, of silver wire or hempen sutures will generally be sufficient, unless the recto-vaginal septum be torn through, which is a very different thing. Dr. Denham's curved needle, with a long handle, would, of course, be admirably adapted to bring the parts together; but in the majority of cases we can do this well enough with the ordinary small-curved needle. I cannot agree with Dr. Harley's view, that this accident is often caused by external manual pressure or support on the perinæum. I believe that those who have attended the largest number of midwifery cases will be in favour of the old practice of supporting the perinæum. I know that it has been opposed by several distinguished recent writers; but on this, as on some other points, I believe that gentlemen who write from theoretical knowledge would arrive at a different conclusion if they only depended upon their own observation and experience in obstetric practice.

DR. HENRY.—I attended a woman two years ago. The head of the child came through the recto-vaginal wall of the perinæum. I stitched the rent with a common darning needle and hempen thread. On the fourth day afterwards I found that the parts had united and I removed the ligatures. I believe that when laceration occurs the interference should be at once, while the parts are raw. I entirely differ from Dr. Madden with respect to the expediency of supporting the perinæum. Over and over again I have known lacerations to occur in persons who were rather above than below thirty years of age, and in their first confinement; and I believe that persistent support of the perinæum has caused more rents than if the practice were not resorted to at all.

DR. MACAN.—It is quite plain that in Dr. Harley's case the central rupture was in no way due to want of proper support of the perinæum. There are, I think, a certain number of conditions which mechanically predispose to the occurrence of this accident. In general terms anything that causes the head to press unduly on the posterior portion of the perinæum must be looked on as a predisposing cause of central rupture of the perinæum. Among these I would place undue straightness or want of curve of the sacrum. In this condition there is nothing to reflect the head when it reaches the floor of the pelvis forwards under the arch of the pubis, and it is forced against the posterior portion of the perinæum. In like manner, if the obliquity of the pelvis be very slight, the direction in which the uterus acts will drive the head against the posterior portion

of the perinæum. Again, if either the pubic arch be too narrow, or the presenting portion of the head does not readily adapt itself to the arch of the pubis, there is for similar reasons increased danger of this rupture taking place. There is also a predisposition to the accident in cases where the perinæum itself is very large and relaxed, and bulges out readily before the advancing head. If in such a case the vaginal orifice be not easily dilated we shall probably get a central rupture. With regard to the practice of incising the perinæum, I think everyone must agree that if a serious rupture be inevitable it is a most logical practice to endeavour to avoid such a rupture in the line of the raphe by two incisions, each of half the extent, in a less dangerous direction. The great difficulty is in determining in what cases such a rupture is inevitable, and I confess the only test that I know for this is, seeing the edge of the perinæum beginning to tear long before the largest circumference of the head has become engaged in the orifice. With one or two notable exceptions, modern authorities are agreed about the importance of supporting the perinæum, though hardly any two of them coincide as to the method by which it should be afforded. No support can, in my opinion, enable the perinæum to dilate beyond a certain amount, but by preventing the rapid or sudden expulsion of the head we give time for the soft parts to dilate. To keep back the head is probably of more use than any amount of support to the perinæum. One very good method is to pass the left hand in front between the thighs of the patient, and to place the fingers of this hand on the head of the child as it emerges from under the pubic arch, while with the fingers of the other hand placed on the edge of the perinæum we judge of the amount of distension of which it is capable. Another method for avoiding rupture is "shelling out" the head by pressure on the posterior part of the perinæum during an interval between the pains. The immediate operation for ruptured perinæum is, in my opinion, much more difficult than the accounts given in the text-books would lead us to suppose; for we know that bringing the edges of the torn skin together, even if followed by union, is very far from restoring the triangular-shaped perinæum, and with the needle generally used to pass the sutures it is quite impossible to pass them sufficiently deep in order to obtain this object. The conditions also under which the operation has to be performed are often most trying to the young practitioner, and will remain so until the public have been educated to the fact that rupture may take place in the most experienced hands. The first condition necessary for a successful operation is sufficient light, and some authorities recommend putting off the operation for some hours in order to have the advantage of daylight. If the sphincter ani be at all seriously involved, I think the administration of chloroform is indicated, and even when the injury is not so extensive it should, I think, if possible, be given to lessen the pain inseparable from

the operation. The amount of rupture requiring operation is very differently estimated by different practitioners—indeed, some would have us believe that a ruptured perinæum was unknown in their practice, and hence that they have never met with a case requiring operation, while others run to the opposite extreme, and operate in every case of rupture with the object of lessening the chance of septic infection; but in my experience a large number of practitioners get out of the difficulty by never looking to see whether the perinæum be ruptured or not.

DR. HARLEY, in reply.—The President has mentioned that the late Dr. Beatty was the first to use incisions, with a view to prevent this injury; and Dr. More Madden has stated that 100 years ago Sir Fielding Ould recommended this practice. I am acquainted with Sir F. Ould's works, and I was present when Dr. Beatty read his paper before this Society; but neither of them spoke of the *bilateral* incision. I have not seen the paper Dr. Madden speaks of; but as far as I can find in the literature of the subject, Dr. White, of Buffalo, is the only person who has written on and recommended this bilateral incision; and this was what Dr. Roe, who, I greatly regret, is unable to be present, had called my attention to. But the important feature in this case has rather been lost sight of—that is, its *precipitancy*, which rendered it quite impossible to adopt any measures for the prevention of laceration, except the ordinary one of supporting the perinæum with the palm of the hand. Cutting the perinæum was utterly impracticable in my case, the action was so precipitate. Dr. Leishman, of Glasgow, in his new work, and Dr. Reeves, of Ohio, have used the word "precipitate" as exactly describing the action in such cases; the latter mentions a case in which the accident occurred to a woman who had been attended by a German midwife, of some means. An action was about to be taken against her, and the patient consulted Dr. Reeves, who told her that if "she placed him on the witness-stand, his evidence would be, that the accident might have occurred if she had been attended by the first physician in the United States;" that bears out what has just been stated by Dr. Macan, that no matter how much you may watch a patient laceration may occur. The cases related by Dr. Ramsbotham would have been suitable for the bilateral incision, because he had the opportunity of watching the rigid perinæum for a long time, and in one case pressed forcibly on the perinæum for two hours. I consider long-continued and forcible pressure more injurious and conducive to the accident than otherwise, because it has the effect of destroying the elasticity of the parts. In ordinary laceration of the perinæum I always apply deep sutures at once, and I do not find any difficulty in making it a part of the immediate attendance; it is in my experience not very painful, as from the pressure of the head the parts are less sensitive.

Cursory Observations on Whooping Cough. By HENRY KENNEDY, A.B., M.B., T.C.D.; Physician to Simpson's Hospital and to the Whitworth Hospital, Drumcondra.

IN venturing to make a few remarks on whooping cough, I almost feel as if some kind of apology were needed. The disease is very common, the subject hackneyed, and all the standard works on the diseases of children contain elaborate articles on the affection; and yet I presume I address few who, at one time or another, have not felt doubts, relating to the ætiology, diagnosis, and, above all, the treatment of the disease. This I know has occurred to myself, and it is with this feeling that the subject is now brought forward. I wish to elicit discussion on the disease, and also to add whatever personal experience I myself may have acquired. It will not be possible, however, to enter into the subject at length, and I shall therefore confine myself to such points as appear to be of most interest, as well as practical importance.

What is the essence of whooping cough? What is its cause? Is it a neurosis, or an inflammation, or both combined?—for all these opinions have been held. It is, I believe, seldom, if ever, a purely nervous affection; and, on the other hand, there are the strongest grounds for thinking that it is not an ordinary inflammation. Often as it commences in a common cold, it will be admitted that a something must be added before the disease becomes whooping cough. Hence it is certain that inflammatory action not only may, but very frequently does, take precedence of the more distinctive characters of the disease. But it is right at the same time to allow that the attack may commence as a pure neurosis, to which the inflammatory element is subsequently added. For myself I believe that the disease, as we usually meet it, is a combination of the two, either of which may take the precedence, in time or intensity. I think, too, there are good grounds for supposing there is something specific about the inflammatory action which shows itself, and this opinion has been held by many. There will be occasion, however, to allude to this special point further on.

In considering the question of the nature of whooping cough, in a general way, there are some points which appear to me worthy of notice, as helping to throw light on the subject. Thus there are certain specific diseases that cause cough, which is both paroxysmal and convulsive in its character. Foremost amongst these may be named the gouty poison, which frequently causes cough of the character described, and which, if not recognised, I need scarcely add, leads to very distressing results. It may be remembered that Graves long since directed attention to gouty cough.

Again, when influenza prevails the cough which accompanies it is sometimes, though not always, of a marked spasmodic character. It seizes the party very suddenly, and it is to this form the French writers

have given the expressive title of "la grippe," from the way it attacks the throat.

But further still, I am sure I address many who have met instances where ovarian irritation caused cough of a very convulsive kind, and often conveying to the ear most unnatural sounds. Something of the same kind, too, occurs from the irritation which worms occasionally cause in the intestines, and which the expulsion of the worms at once cures. Matters of an indigestible character in the stomach have also been known to cause cough of a very convulsive nature, as have likewise certain derangements of the liver, which, however, it would not be easy by any means to specify.

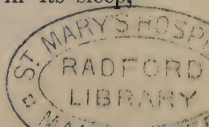
Now these considerations I think tend to help us in arriving at some degree of certainty about the nature of whooping cough; for they show us that coughs of a very similar kind arise from causes which may be described as tangible, and that, therefore, the cause of pertussis is very probably something similar, which, though it still escapes us, there are fair grounds for supposing will ultimately be made out. It has been already stated that many consider the disease of a specific kind, and allied to those affections which occur but once during life. To myself this seems very probable, and that during the existence of the disease some kind of poison circulates through the system. When I come to speak of the treatment I shall give my reasons for holding this view of the subject.

In close connexion with what I have been just speaking of, I must allude here to the complications of whooping cough, which, as you know, are so common that they may be almost described as an integral part of the affection. But it is only to some of these I can allude, for I am not giving a general sketch of the subject. The bronchitis which so often ushers in the attack has been already spoken of. As the disease proceeds, however, it becomes a much more formidable complication, and there can be little doubt that the fits of coughing aggravate the bronchitis, keeping it, as it were, from getting well. At times, again, pertussis becomes epidemic, and should other circumstances be unfavourable the disease then assumes a very formidable character, leading to a large mortality. Several years since I witnessed an epidemic of this kind. All the surroundings were bad, especially overcrowding, and the mortality became great in proportion. I had but too many opportunities of ascertaining the cause of this mortality, which was due to what might be called acute struma in every form in which it could exhibit itself. The lungs were crammed with minute tubercles, interspersed with lobular pneumonia, bronchitis being also present, and all the glands of the abdomen and chest were enlarged, and conspicuously amongst them those in the posterior mediastinum. In this epidemic serious hæmorrhage from the lungs was of very common occurrence.

At another period I was witness to an epidemic which presented features of a different character. Measles had been very prevalent, and even before they were on the decline whooping cough appeared, and in many instances the two diseases were literally conjoined. To this point I venture to call particular attention. I am not aware that any of the standard works speak of it;^a but since my attention was drawn to it, and in the way described, I have got the conviction that measles, to say the least of it, often induces a state of the frame by which whooping cough is developed. Since the epidemic of which I speak I have seen isolated cases of a similar kind—that is, children had measles, and after a brief interval whooping cough showed itself. I confess I think there must be something more in this than a mere coincidence; and in thinking it over it seems to me probable that during the attack of measles the lymphatic glands in the chest had become enlarged, and this state we know would, under even the most favourable circumstances, require time to be recovered from, and would necessarily leave a certain amount of delicacy behind it. Measles are known to be often ushered in by some chest symptoms, and of all the exanthemata there is none I know of so apt to leave what may be called dregs after it as this disease—results, too, which frequently continue through life. Harley's (of London) valuable paper may also be mentioned here as having a bearing on this subject, for he has shown that in all zymotic diseases there is a marked tendency to enlargement of the abdominal mesenteric glands, and, in connexion with them, more or less disease on the mucous surface of the intestines. The taking of all these points into consideration seems to me to help in clearing up the obscurity which still hangs over the ætiology of whooping cough, and I must add I have got the impression that in this disease it is very likely there is some temporary enlargement of the lymphatic glands, and more particularly of those of the thorax; but this point still requires positive proof.

Is the diagnosis of whooping cough always easy? By no means. I am sure there is no one present who has not met with many cases where he has been kept in doubt for one or two weeks, and has been unable to pronounce on the character of the cough. It is of course understood I am speaking of the time preceding the appearance of the whoop. Once it is heard doubt no longer exists. There are, however, two or three points which may often be noticed, and which I believe—indeed I may say I know—will help us to make up our opinion that whooping cough is coming. One of these is the persistence of the cough longer than an ordinary cold would occupy, and in connexion with this the resistance which the cough offers to ordinary treatment. This at times is very striking, and should always put us on our guard. Again, when whooping cough is forming the child is very apt to cough in its sleep,

^a West, I find, makes a passing allusion to this point.



and when sleeping quietly will be suddenly awakened by the cough. I look upon this as very characteristic. In the last place it is always advisable to inspect the inner throat, for if pertussis be coming it is rare indeed that this part is quite healthy. It exhibits a congested appearance, and sometimes is slightly swollen, as are also the tonsils, and there is commonly a certain amount of secretion even early in the attack. By attention to these points a tolerably certain opinion may be arrived at, but, as already stated, it is the whoop alone which gives us certainty. We must not forget, however, that, like other diseases, whooping cough exhibits great variety as regards its intensity. Thus if three or four children of the same family and at the same time exhibit the disease, the chances are that there will be a marked difference in the cases—one only may be severe, and the others of a much lighter character. Indeed, I have often seen instances where, though the child had a troublesome cough, it never whooped at all, though its brothers and sisters did, yet I could not but believe that this one also had the disease. It has seemed to me that infants exhibit the whoop more frequently than children a little older; and those cases where no whoop existed were of children from three to six years of age.

Though whooping-cough is essentially a disease of infancy and childhood, yet it is known that adults are sometimes affected by it. I have not seen many cases myself, but those that came under my notice were not only well marked but of great severity. One such was very recently under my care. The patient was an old lady of seventy-eight, and the fits were of unusual severity—so much so, indeed, as to lead me to fear she might have died in one of them, the more so as I knew she had disease of her heart. She recovered, however. I should state that whooping-cough was in the house at the time; and, indeed, one out of three children never whooped at all, though otherwise she had a very obstinate cough—thus proving a point to which your attention has just been drawn.

Before concluding these “disjecta membra” I would make a few remarks on the treatment of the affection. There are, however, two observations which, before speaking of any special treatment, seem to me worthy of notice. In the first place, many of the public have the idea (and, indeed, I have known some medical men also hold it) that whooping-cough must run its course—that is, that treatment is of no avail. Now, independent of the power which we have over most of the complications that may attend the disease, and about which there is no doubt, I hold that it is a serious mistake to give our sanction to this idea, and that whenever we hear it advanced we should at once challenge it; and for myself I may add that I carry out the same principle in other diseases, and notably in fevers.

In the next place, the advances which have been made, by the dis-

covery of new medicines, have given us much greater powers in treating diseases than existed a quarter of a century since; and amongst these diseases whooping-cough, it seems to me, should occupy a prominent place. My reasons for stating this will be apparent as I proceed. And now, when called to treat a case of whooping-cough, we must, of course, be guided by the state of the patient, and especially by the amount of fever present, for in a large number of cases feverish symptoms exist. It is, however, I believe, always a good rule, whether the child be feverish or not, to put it on a milk diet, at least for a time; and this can be altered as the disease progresses. That this is an important rule I have no doubt; and I may add I have often seen relapses caused by the child getting solid meat when not in a fit state for it. This is often so marked that a single indiscretion will cause a relapse, and has sometimes led me to think that some peculiar state of the stomach was the cause of the complaint. This rule about a milk diet has been often advised, and to myself it has always appeared to be a prudent measure. Nor does it necessarily exclude the use of soup.

A second rule which I have long adopted is to give medicines only during the evening and night. I was led to this plan by the fact that whooping-cough is, I may say, invariably worse during the night than the day. That the fits are more violent at night I will not assert, but that they are more frequent cannot be questioned. Acting on this fact my directions are that the medicines are to be begun in the afternoon and continued at night, and the frequency of the dose proportioned to the number of the fits. To give a dose after each fit is by no means a bad plan. In this way I have found that, within a week, speaking generally, the attacks are much changed for the better—the number, in the first instance, being lessened, and in the second their severity. But it must be allowed that the latter—that is, the severity—often lasts a long time; and whatever amount of cough remains, no matter how infrequent, is very apt, as all must know, to preserve the characters it had at the beginning; and so, after months, the peculiar whoop may be heard.

The medical treatment of the disease may be divided into the palliative and curative. With one exception, however, the former need not be dwelt on—for I need not speak of the necessity of confining the child to the house, or it may be one room, when the attack is ushered in by feverish symptoms, as it often is. The exception to which I allude is the use of chloroform during the paroxysm of the cough. I have looked through the more recent works on the diseases of children, and find it is very briefly noticed; and yet it would seem to me a very obvious remedy, and, what is of much more consequence, I have found it a very valuable one in lessening the violence of the fits—and when convulsions or hæmorrhage are threatened this is no little gain to effect. In one

aspect, indeed, this measure may be looked on as curative, so certain is it to mitigate the cough. I have seen no unpleasant result from the use of the chloroform, and the whole proceeding consists in making the child inhale one or two whiffs of the drug. I commonly use it pure, and direct from the bottle; but when parents object, as they sometimes will, it is a very simple matter to dilute it.^a

Of the medicines which are useful in curing the disease I shall only allude to three or four. One of the oldest of these, and probably the most certain, is the bicarbonate of potash. It may be recollected that this drug is one of the component parts of the famous mixture which so long held its ground as a cure for whooping-cough. I have no doubt of its value, especially where fever exists or there are grounds for supposing any of the mediastinal glands are enlarged, to which point I have already drawn your attention. The bromide of potassium has of late supplanted the bicarbonate, but I have not been able to satisfy myself that it possesses superior powers. To the potash some one of the anodynes is to be added. Indeed I am not sure but that this class of medicines should have been spoken of first, so valuable are they in the curative treatment of the disease. Some preparation of opium was formerly used, but this has now given place to other anodynes, especially belladonna; nor can there be any doubt of the value of this drug, nor of the fact that children bear it in much larger doses, proportionally, than adults. At any rate, when joined with potash, it has a distinctly controlling power over whooping-cough, both on the intensity and frequency of the fits.

Of the hemlock, too, I can scarcely speak too strongly. In addition to its soothing effects it possesses valuable tonic powers; and once all fever is gone I cannot doubt its specific effects over the cough. I need scarcely add that it was an old remedy for the disease, nor that in the form of extract it can be made up into a very palatable mixture which children will readily take. It must be given in much fuller doses than is usually done. From two to four grains may be given to an infant of a year old, and in each dose.

The prussic acid long held its place as a remedy for the complaint, and many still use it; but, whilst some cases yield to its influence, others seem not to be influenced by it, and as it is not a remedy which can safely be increased it has fallen into disuse.

The medicine, however, which seems to me to yield the best and most constant results is chloral. It comes as near a specific as any I know, nor have I seen any unpleasant effects from it. Of its direct power over whooping-cough there is no doubt, and it may be given to the youngest infant. The only objection I know to it arises from its taste, and some

^a West speaks of the use both of ether and chloroform, but of neither does he write approvingly.

children cannot be got to take it. This, however, can be lessened in a degree; but this is not the place to enter on the point.

When the bronchial secretion is very profuse—and I need not say what a variety of opinions exist on the point—emetics are very useful; and it is particularly to be observed that they are useful even when every fit of coughing ends by vomiting. The evening is the best time to give them, and probably ipecacuan is the best drug for the purpose. It is in this state that alum has been found so useful, but I have no experience of it.

The last means of which I shall speak here are rubefacients, which, as you know, are very popular remedies. When the disease has become chronic I believe they are useful, and in proportion to the redness they create. I think I have observed the best effects when they were rubbed over the stomach.

Though I have spoken of remedies separately I do not mean to convey the idea that they are to be so used; on the contrary, much the best results are obtained by combining them, and each will have his own way of carrying out the plan. If this be done, and the drugs given so as to produce their physiological effects—and this I consider as essential—I have no hesitation in repeating that whooping-cough is quite an amenable disease to medical treatment, and that its course can be rendered very much shorter and milder than if it were left to itself. To subdue it completely it is necessary that the treatment should be continued longer than the symptoms present would seem to require.

THE PRESIDENT.—I believe Dr. Kennedy's directions are very sound—namely, during the acute stage to keep the patient in a moderately warm temperature, in moderately warm clothing, and on simple diet, and to treat the case as an ordinary one of bronchitis. I have seen some cases of whooping-cough in which the patients died actually worn out by the disease. I have no doubt that in many such cases as Dr. Kennedy has recorded the fatal results are due to strumous changes occurring in the brain, lungs, and mediastinum.

DR. MORE MADDEN.—Dr. Kennedy's account of his experience of whooping-cough is most valuable, but we must recollect that such remedies as chloroform, chloral, prussic acid, conium, and belladonna are rather gigantic weapons to employ in dealing with children. The allowance of a period of about six weeks is about the best treatment for whooping-cough, and in some cases it takes longer.

DR. DOYLE.—As to the disease wearing itself out I know a case of a child a month old who got whooping-cough, and was cured of it, but literally died cured. After it had had the cough for a couple of days with febrile symptoms the whoops were suddenly replaced by convulsions which continued incessantly for a month. At the end of the month the convulsions disappeared, but the whooping-cough came back. Then it

disappeared, but the child died in three or four days afterwards from exhaustion. We used conium, and I can speak very highly as to its effects. I have not used chloroform or chloral, but have found chlorate of potassium and vin. ipecac. valuable. Another remedy which I have sometimes found to be efficacious is the use of a turf fire in the room where the child is.

DR. MACAN.—As to the ætiology of whooping-cough most people think there is a similarity between it and the ordinary exanthemata. It seldom occurs twice in the same person, as if the first attack had made a change in the child's constitution. As to the treatment I think its character should depend on whether the symptoms of bronchitis or of neurosis preponderate. Bicarbonate of potash is a well-known remedy for lessening phlegm. I would not hastily use chloroform, but a few drops on a handkerchief may be usefully employed to check convulsions.

DR. HENRY.—I have seen a good deal of whooping-cough, and according to my experience epidemics of it preceded measles, and then the latter was followed by scarlatina. I never remember anyone having whooping-cough a second time except a gentleman eighty-three years of age who recovered from it, and died twelve months afterwards of disease of the kidneys, when the disease showed itself as chiefly spasmodic.

DR. KENNEDY (in reply).—I do not allow for a moment that the disease must necessarily run its course. I believe that in a vast number of cases it yields to treatment, and that within a fortnight. We cannot strangle the disease, but we can abridge the duration of it. I have done this so often that I have not the slightest doubt about it. As to the powerful medicines they can be used in quantity proportionate to the strength of the child. Chloral in particular can be managed with the greatest possible ease. I have not seen a single instance of bad effects resulting from the use of it. I do not hesitate to give half a grain to a patient a month old. It is important not to remit treatment immediately on finding that you are conquering the disease. You should continue the treatment. I forgot to allude to the value of change of air. There are cases in which nothing else will do, the children being often wasted to skeletons by the disease. I have also known benefit to be derived from a number of plates filled with tar being placed in the room. With respect to diagnosis, if you are in doubt inspect the child's throat, and if it be red and slightly swollen you may be almost sure that the disease is coming on. I have never known the slightest mischief to result from the use of chloroform.

The Society then adjourned until next November.



PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

Phthisis with Peculiar Nervous Symptoms.—DR. FINNY said: These are the lungs, brain, and spinal cord of a patient who was for some months in the City of Dublin Hospital. She was a married woman, aged thirty-two or thirty-three. She was admitted early last September and died on the 4th of the present month. She had been a patient under a Dublin practitioner with symptoms of phthisis, consolidation, and softening of the back of the left lung. For change of air she was advised to go to one of the suburbs of Dublin. On the second day of her arrival there she got into a peculiar nervous state, became delirious at night, screamed and complained of intense cephalalgia. It was thought that it was a case of meningitis, and as such she was admitted under my care. All her symptoms were those of cerebral meningitis, as she laboured under intolerance of light and sound, screamed and rolled her head, and her temperature was high, varying on the evening of her arrival from 104° to 102° , and ranging afterwards from $101\frac{1}{2}^{\circ}$ to $102\frac{1}{2}^{\circ}$, her pulse being always over 100. Physical examination detected a very small amount of disease in the back of the apex of the left lung, while the other symptoms of lung disease became quiescent, there being no more cough or expectoration. During October and November her symptoms remained very much as described. There was always fever with a temperature of from 100° to $101\frac{1}{2}^{\circ}$; her mind seemed weak, as she did not recognise people, but called them by wrong names, laughed foolishly, and showed other signs of cerebral softening. Remarkable symptoms of disease of the lower extremities developed—viz., intense hyperæsthesia of the legs with rapid wasting. Passing the hand down the front of the tibia caused agonising pain which made her cry out. This was followed by wasting of the lower limbs. The knee phenomena, including the patellar reflex, were perfect, and there was no incoördination. Vesical troubles did not occur, and she had command over both sphincters. No other change occurred for a considerable time. We hourly expected her death, but in January the nervous symptoms seemed to abate. Although her limbs were greatly emaciated the hyperæsthesia had passed away without proportionate anæsthesia ensuing, and she could draw her limbs up and down, so that it was evident there was no complete motor paralysis. The tendon reflexes were unaltered, and there were no

bedsores. Towards the latter end of January she developed rapid symptoms and signs of pulmonary phthisis, including emaciation, with copious purulent expectoration, and in fact she died of the disease of which she showed the signs in August and September, and which had been quiescent from that period until the end of December. A careful examination of the ventricles of the brain and the pia mater failed to detect any evidences of disease in either the brain or its membranes. The lateral ventricles and the pia mater and its prolongations are all normal. The spinal cord has been a week in Müller's fluid, but I am not in a position to make any observations on it beyond saying that there was no disease evident to the unaided senses. The lungs present very well-marked examples of phthisis in its various stages. The chief disease is in the anterior portions of both lungs, but particularly in that of the left. The lower portion of the upper lobe which overlaps the heart in a tongue-like process is converted into a great caseous mass from which cavities run up into the deeper substance of the lung. The apex of the lung is involved, and at the back part is a distinct thickening of the pleura, and here there is a cicatrix of some extent on the surface of the lung, which presumably indicates the early position of the disease. The whole lung is studded over with tubercles, not of the miliary type, but yellow masses involving the bronchi and the pulmonary substance between them. The right lung is in almost a similar state. We have cavities in the lower and upper lobes—the lower lobe of the right lung being in a further stage of degeneration than the corresponding lobe of the left. The back of the right lung is more free from disease. The value of the case is somewhat lessened by the circumstance that no microscopic examination has been made of the spinal cord, but as far as the examination I made of it went it presented nothing that I could say was decidedly abnormal except extreme hardness of the middle portion of the cord. It is softer at the lumbar and cervical portions, but at the dorsal region is particularly hard. The nervous symptoms, which appeared in September and lasted till January, having entirely superseded and taken the place of those of lung disease, pointed to the arrest of the pulmonary disease and to the development of tubercle in the nervous centres, and if it had not been for the negative result of the *post mortem* examination I would have set down the disease as one of tuberculosis of the brain and spinal cord. I am entirely at a loss to explain the symptoms, in the absence of macroscopical organic disease, except on the hypothesis that there was some functional derangement of the circulation in the nerve centres.

The PRESIDENT.—The cerebral symptoms are not uncommon and are not always due to pathological changes. Dr. Finny has made such a careful examination of the brain that I am sure he has not omitted to examine the condition of the fornix and of the various commissures of

the three ventricles. I think the changes of the brain are most often found in the internal parts. The subsidence of the pulmonary symptoms while the cerebral symptoms predominated is analogous to what takes place in other cases where there has been a subsidence of cough and other pulmonary symptoms or the occurrence of diarrhœa.

DR. FINNY.—I made a very careful examination of the brain, and found no softening of the fornix or of the septum which we generally find softened when there is inflammatory action.

DR. BENNETT.—It appears to me that the case in one of its aspects fulfils conditions which have been long described. Dr. Finny recollects the description of hectic fever in Colles's lectures. This woman was insane for a time, and a remarkable point in the case is that when insanity supervened it arrested the progress and even the physical signs of pulmonary phthisis.—*February 12, 1881.*

Chronic Myelitis and Pyelitis with Pyonephrosis.—DR. FINNY said : These are the spinal cord, the bladder, kidneys, and ureters which were taken from a man who died yesterday in the City of Dublin Hospital, of which he had been an inmate since the middle of last December. He was unmarried, aged about twenty-six years. There was no history of syphilis. He had been a soldier, and had while in India suffered from fever and afterwards rheumatism, with pains in his knees and ankles. Not deriving much benefit from treatment he was invalided and sent home, and after a time the pains came on again as bad as ever in his knees. He was discharged from the service last April. When admitted under Dr. Benson's care in December last he presented many of the symptoms of (as he thought) aggravated locomotor ataxy which had passed the second stage, though at no time was there any history of ocular troubles, such as are found in many forms of locomotor ataxy. When he came under my care in January he was almost completely bed-ridden. Although he complained of his knees and ankles there was no swelling nor any sign of rheumatism. In his upper extremities he had good power, but in his lower extremities very little power. The patellar reflex was completely gone, while the superficial reflexes remained in the side of the foot and thigh, and the ankle clonus was particularly well marked. There was no great wasting, and the superficial sensation was unaltered as to touch, pricking, tickling, and also as to temperature. The bladder showed troubles from an early date. There was no stricture of the urethra, yet he had at first hesitancy in emptying the bladder, and after a time complete loss of control over the sphincter, so that retention took place. In the middle of January the sphincter of the rectum became paralysed. At this time a change in the symptoms with reference to sensibility became marked, and he had now extreme hyperæsthesia of the legs both as regards touch and movement. Any attempt at moving

him in bed or passing the bed-pan was attended with extreme pain, and on anyone touching the bed he cried out from an agonised fear of being moved. He then became greatly emaciated, and for a fortnight before death anæsthesia took the place of the former exalted sensation. About the same time fever lighted up, and he became delirious and partly unconscious. The cause of death was what so often ends such cases—namely, blood-poisoning and fever, induced by retention of urine. Every method that could be adopted of relieving his bladder, and the consequent distress, had of course been tried, but owing to the paralysis of the bladder were found to be of little use. He thus suffered from chronic cystitis from decomposition of the retained urine, which ran the usual course, causing great thickening of the walls of the bladder, and producing a frayed and ragged condition of the mucous membrane and the muscular coats. In some places it is so marked that, as this specimen shows, one can lift the muscles from the floor of the bladder and pass a probe underneath. Considerable difficulty is experienced in finding the entrance of the ureters into the bladder, due to the thickening of the organ in these situations, and water passed down the ureter and trickled through various holes into the bladder. The inflammation had extended from the bladder up by the ureters into the kidneys, for the former are distended like a small intestine, and their mucous surface presents the typical appearance of chronic inflammation which has been so well depicted in Cruveilhier's and various other plates, and is well seen in the present specimen (which was removed only at one o'clock to-day). The disease extended also up to the pelvis of the kidney and to the infundibula and calyces, and caused purulent matter of an abominably fœtid nature to form in the substance of the kidney, producing in some places pyonephrosis. I presume it was by this train of disease that death, which occurred yesterday, was caused. When the spinal canal was opened, which was done with all care, I found a great deal of fluid which seemed to run from the cord. The vessels, particularly the veins of the pia mater, are greatly distended and much larger than they ought to be. Over a great portion of the dorsal and lumbar regions there seems to be extensive softening, in which the posterior columns participate. The case was therefore one of degeneration and softening of the cord, the result of myelitis, in which the membranes were not involved, and not one which had its origin in posterior spinal sclerosis; and it is interesting clinically in two respects—1st, the arthritic pains due to nerve irritation so often confounded with rheumatism; and 2nd, the late period of his illness at which the disease involved the sensory tracts—producing hyperæsthesia, and afterwards anæsthesia. It is also an excellent example of the dire consequences of chronic vesical catarrh, where the bladder cannot be freed from the decomposing urine. I considered the case wanting in the well-marked characteristics of locomotor ataxy. I

think it was originally disease of the central processes of the lateral columns of the cord, and that it extended to the posterior roots, and by irritation set up the hyperæsthesia which developed in January. As soon as the posterior roots were completely involved we had the anæsthesia, which was proved by the fact that a few days before his death he could not feel the pulling of hairs out of his legs. I considered the condition of the bladder as entirely secondary to the spinal disease, and that the retained urine was quite sufficient to account for the condition of the bladder and the extension of the disease up the ureters and into the kidneys.—*February 12, 1881.*

Sarcoma of the Tibia.—*DR. THOMSON* said: This specimen was taken from a boy, aged fourteen, who was admitted into the Richmond Hospital on the 20th of January, 1880, and who died on the 21st of January, 1881. When we first saw him he complained of a lump on the right tibia. The history we got of the case was that some weeks before his admission his father gave him a kick with his stocking-clad foot, and that the tumour grew there afterwards. On examining it we found that it had all the external appearances of an ordinary chronic abscess, and we thought that it was probably connected with the periosteum, and that if we cut down on it we should get to the bare bone. The boy's parents, however, would not allow any operation of that kind to be performed. As a last resource we thought it well to explore it, which we did with the needle of an aspirator; but we got only a few drops of blood, and no pus. Two days afterwards the boy was removed from the hospital. He was again admitted on the 6th of July, and had then an enormous tumour on the right tibia—a simple extension of the original one which we saw in the preceding January. The case was under Mr. Thornley Stoker's care, in my absence; and all I need say about it is, that the leg was amputated two days after the boy's second admission, and he was discharged on the 9th of August practically well. He improved very much in appearance, put up flesh, and presented himself at the hospital from time to time looking extremely well. On the 21st of November last year he got a severe wetting; next day he complained of headache and rigors, and became very thirsty. On the 27th, six days after the wetting, he came to the hospital in a state of high fever, with bounding pulse, flushed face, and all the other ordinary symptoms of pyrexia, and complaining of a sharp pain on the right side of the thorax. It had attacked him a day or so after the wetting. He also stated that he suffered a great deal from a sensation of pins and needles in the right arm. We examined him closely, and found that he was evidently suffering from pneumonia of the right lung. At both the back and the front it was almost solid. There was a tympanitic patch under the clavicle which remained for a considerable time. His temperature was very

high. He went on for some weeks, and was treated as an ordinary case of acute pneumonia. We kept him in the Richmond because we knew that he had been suffering from sarcomatous disease, and we thought that there might be a secondary deposit of it attacking the lung, and that we might get an opportunity of seeing what was happening. However, he partially recovered his health, and the lung cleared up very much in front, but never behind. He remained in hospital until the 18th of January. At that time he was up and about the ward, and there was then no sign of fever of any kind about him, and he was putting up flesh. I should have mentioned that he complained very much of neuralgia on the right side of the lower jaw; and the resident pupil, finding that he had a bad tooth, extracted it, but the pain was not relieved thereby, and from time to time afterwards he suffered considerably from this neuralgia. Then he developed a small tumour on the temple, very soft, and not painful; he discovered it himself by accident; It never grew larger than three-quarters of an inch in circumference, and was not very much elevated above the surface. He complained about the same time of pain in the stump of the thigh; we could discover nothing particular about it the first time it was examined, except that it was inclined to become conical and the tissues were rather tense over the end of the bone. Later on he noticed a good deal of thickening just below the trochanter, and called my attention to it. I felt the thickening and found that there was not a distinct tumour, but a thickening of the bone and the tissues about it. The pain, however, disappeared. On the 18th of January, when he was supposed to be going on tolerably well, he complained of acute sudden pain midway between the left lowest rib and the crest of the ilium; he said the pain radiated from one point; we could not make out anything in that place; there was some dulness about the epigastric region, more than we should have expected; the left lung on being examined was found to be dull. He rapidly sank from this date, and died on the 21st of January, three or four days after the renewal of lung symptoms appeared. The specimens then removed from the body are here; the original tumour is in the museum of the College of Surgeons, and will be shown on a future day. Our attention was, in the first instance, directed to the lungs; and Dr. Harvey, who made the *post mortem* examination, will supplement this history. The left lung was collapsed; the right lung is as we see it here. On opening up the thorax these curious appearances presented themselves. On the left lung is a large pedunculated pale grey tumour, with a very narrow pedicle of about an inch and a half thickness in one direction, and rather more than an inch in the other. At the posterior surface of the lung, near the apex of it, and towards the outer margin, we have this very large tumour with a number of distinct nodules projecting from the general surface of it. So on, throughout,

we find a number of tumours projecting and pedunculated. At the lower posterior surface of the lung there is a very distinct and rather flat-shaped tumour which has the appearance of a bit of a liver; it has changed in appearance since the parts were originally removed; it was then white or cream-coloured, but, from being cut through, has lost that appearance now. The right lung was more infiltrated than the left. On the left the tumour seemed to project from the surface; in the right lung the tumours seem to have incorporated themselves with the organ itself; they specially prevail towards the base. We have here portions of an enormous mass of this disease, very like ordinary brain tissue, darker now than it was originally, but still giving a fair idea of the appearance the mass presented; the material is almost diffuent. At the upper surface we cut through a large tumour; its contents, which are before you, have been since preserved in spirit; they consist of distinct capsules filled with this material; the whole substance of the lung seems affected with the disease; on one side the entire lung is converted into a tumour. When Dr. Harvey cut into the abdomen the knife passed through a small lump lying in the falciform ligament. It was about the size of a large walnut; and its contents, which were a white colour and diffuent, escaped. As I have already said, though there was some extension of dulness in the epigastric region, and he complained of tenderness there, as well as of a tender spot between the lower ribs and the crest of the ilium. When the pancreas was exposed Dr. Harvey found on it a large secondary deposit. There are two small, but distinct, nodules here which have been cut through, and you can see the margin of the tumour embedded in the gland. There was a tumour, about the size of a middle-sized orange, and practically of the same material as that in the lungs, and a considerable extravasation of blood had evidently taken place into it; there was this brain matter, and extending through it lines of extravasated blood. The blood was very dark, and had much the appearance of a mass of black currant jam, with a quantity of white material passing through it. The retro-peritoneal glands were infiltrated. Coming to the stump we found that the femur had given way just below the great trochanter at the seat of the disease, the bone having thinned away to a shell. The mass we found here was of precisely the same character as that found elsewhere. The disease has been determined by Dr. Harvey, after careful examination, to be round and spindle-celled sarcoma, which corresponds with what was originally found in the tumour when the leg was removed last July.

DR. HARVEY.—I examined the tumour in the leg bone and found it to correspond very accurately with the specimens taken by Mr. Abraham from the tumours in the other parts. There was considerable difficulty in recognising the sections taken from the respective tumours; but, in every instance in which an examination was made the round and the

spindle-celled sarcoma was found to prevail. I suppose the disease began in the bone, and that it was conveyed through the capillaries and blood vessels to the lungs. It does not appear definitely how the infection took place. On the right hand side the pleural cavity was almost, if not entirely, obliterated, and the lung tissue was becoming a good deal affected.

The PRESIDENT.—Was the liver affected?

DR. HARVEY.—It was perfectly healthy; it was a good deal depressed owing to the lowering of the diaphragm, and was slightly pale and fatty, but not so to any great extent. The tumour in the falciform ligament had made a considerable indentation in it.

DR. FINNY.—The question as to the mode of transmission of the cancerous disease—whether it was directly through the lymphatic system, or through the arterial and venous system—is an interesting one. It seems to have followed the course of the venous trunks. This does not, however, explain what was found in the pancreas and the falciform ligament, and which may have been due to secondary absorption through the lungs and the arterial capillary system. Although the pleuræ are involved, a point of interest is that the pleuræ are not inflamed round the cancerous mass; inflammation of that kind is rare in such cases.

DR. HARVEY.—The obliteration by old adhesions was a matter of years, and probably altogether preceded the secondary deposit in the lungs.

DR. THOMSON.—When he complained of pain in the stump, and soon after a distinct swelling developed there, I came to the conclusion that he had a secondary deposit in the lung. No bone but the femur was affected.—*February 19, 1881.*

Injury of the Eyeball.—MR. STORY said: This specimen exemplifies two of the injuries which may affect the eyeball without causing any external lesion. The globe was taken from a boy aged twelve years, who was admitted into St. Mark's Hospital on the 25th of October, 1879. Six days previously he received a prod of the rib of an umbrella in the eye, and he had been five days under treatment in another hospital. When I saw him he had acute iritis, with considerable synechia posteriorly, great vascularity, photophobia, and tenderness; and we could not illuminate the fundus by any light. He was put to bed, and leeches and ice were applied, but without any effect on the condition of the pupil, or without any improvement in the symptoms. Four days after his admission, and ten days after the accident, I found his other eye severely implicated by sympathetic irritation, with considerable lachrymation and congestion, and great photophobia. We could then see, in the lower and outer side of the fundus of the injured eye, a large whitish mass which I took to be pus, effused into the vitreous; and, recognising

the hopeless state of this eye and the imminent danger of the other one, I enucleated the injured globe on the 1st of November, and was gratified by the immediate subsidence of all the sympathetic irritation. The only lesions I discovered were dislocation of the lens, in which direction I was not able to determine, but it was held tightly in its new position by the adhesions to the iris; and the suspensory ligament was not totally ruptured. In addition, I found a detachment of the chorioid from the sclerotic at the place where, I take it, the injury was received, and a similar but smaller detachment at the opposite side of the globe. The portion of vitreous near the detachment was becoming yellow, the rest of it being of the ordinary hue. I made a microscopic examination of this portion of the vitreous, and found that it was not infiltrated with pus cells, but that it contained a number of small round cells, with a great many irregularly-shaped cells with club-shaped processes, and tails projecting out.—*February 19, 1881.*

Malignant Disease of the Bladder.—DR. THOMSON said: This specimen was taken from a man who was recently admitted into the Richmond Hospital from the Whitworth Hospital, where he was a patient suffering from incontinence of urine. That trouble had existed for some two or three months, but only for about two weeks in a very aggravated form. I examined him very closely as to his previous history, but he said he could not date the appearance of the symptoms connected with this disturbance of his bladder further back than four months. He was quite positive as to that. He was unable to retain his urine day or night, and it dribbled away from him spasmodically. At times his bladder seemed to contract on only a few drops of urine, and he suffered fearful agony for the time being. He was a discharged soldier, and used to work as a navvy; and while he was able to continue his employment he was obliged to leave his work occasionally and go behind a wall in order to squeeze the water from his shirt. It was only within the two weeks before his admission that his condition became unbearable. He was a tall thin man, but he had evidently been much stouter. I made inquiry of him on this point, and he said that within the last few months he thought he must have lost between two and three stone weight. I asked what had been done for him on the night of his admission, and was informed that a catheter had been passed into his bladder without any particular difficulty, but that no urine had been taken away. I examined him at once by the rectum, and found his prostate gland enlarged; and on one side I could feel through the membrane of the gut a rather distinct lump, consisting of nodules differing in density from the general mass of the gland. On examining the abdomen I detected a tumour in the position of the bladder, and thought it possible that the pupil had not succeeded in reaching that viscus, and

that there was still a quantity of urine there which had not been removed. However, a closer examination showed that the tumour was much denser than one would find even in a very distended bladder, particularly on the left side, where there was a very hardened mass. I came to the conclusion that the man was suffering from some malignant disease of the bladder, and that we had not to deal with a case of retention of urine at all. In order to make everything clear I passed a catheter into the bladder, with the result of bringing away a few drops of urine. For some days the case went on without any special symptom. We were satisfied that the urine was being fairly evacuated from the bladder, and that there was no need for instrumental interference. We simply tried to allay pain. Dr. Gordon, who was in the hospital when the man came in, and Dr. Corley, both agreed that he was suffering from malignant disease of the bladder. Towards the end of the week he developed the feverish symptoms that are usually dependent on urinary obstruction, and died within five or six days after his admission. Dr. Harvey made a *post mortem* examination for me, and we have here a portion of the specimens that were removed from the body. One of these, which has been kept in Wickersheimer's fluid, pretty accurately represents the appearance it had over a month ago, although there is in some places a little blanching. The incision was made on the upper surface of the bladder, and we found that practically there was no cavity at all. There is an enormous thickening of the walls, which has obliterated the cavity. The urine trickled through a cleft between the approximated walls, and made its escape through the urethra as fast as it was secreted. When the bladder itself was examined, before it was cut into, the great density of it could be determined by the hand; and on cutting through it we found that we had to go certainly over two inches in depth before what remained of the original cavity was reached. When it was reached the curious condition that we have here was presented. There was hanging from the right side and the right upper surface of the inside of the cavity this great mass, which at the time had very much the appearance of a bunch of Hamburg grapes. There is a pedicle to the principal mass of half an inch, or a little better, in width, from which we have depending this large lobular mass. There is another portion in front of it, separate from the pedicle of the larger tumour, from which we have a secondary growth, and towards the right side of the surface we have a solitary growth, very black, soft and pulpy to the fingers. We have also another distinct tumour, with a narrow pedicle, springing from the left upper surface of the bladder. The walls of the bladder itself are rugous, except upon the upper surface, which is tolerably smooth; but the lower surface, where the tumour does not exist, is still of considerable thickness—about half an inch. The great bulk of the thickness is caused by the existence of a tumour,

spreading in the walls of the bladder, and occupying the upper and lateral surfaces of it. The inferior surface is perfectly free. With respect to the prostate we did not think at first that we had anything more than an enlarged gland, but Dr. Harvey, who made a careful examination of it, as well as of the tumours on the walls of the bladder, tells me that it is cancerous. The appearances of the tumours are of extreme interest, from the peculiar arrangement of the fungating masses. The occurrence of cancerous disease, either primary or secondary, in the prostate gland is not common. As to the surrounding parts, some of the retro-peritoneal glands were enlarged, and Dr. Harvey has retained them for microscopical examination. Beyond the disease in the bladder and prostate there was no secondary deposit in any of the other internal organs. The lungs had some tubercular deposit, and were considerably congested. The kidneys were in a state of hydronephrosis. There is great dilatation of the ureters on both sides. We have here a portion of one of them which emptied into the bladder; it is more like a piece of intestine than anything else. There is very well marked stenosis of the mitral valve of the heart. Thickening and nodulation exist along the entire free margins of both portions of the valves, and can be extremely well seen. The general surface of the valve itself is free from any kind of thickening. We have in the pulmonary artery a small patch of atheroma; and the same condition is very well marked in the aorta itself.

The PRESIDENT.—Had he hæmaturia?

DR. THOMSON.—He never had. The only hæmorrhage I ever saw was about a tablespoonful after the use of the catheter. The catheter had been several times applied to him in Bray for retention of urine; but I have no doubt that what existed was the condition which presented itself when he came to the hospital—that is, not retention, but simple incontinence, and the malignant tumour. He suffered a great deal of lumbar pain, which shot down his legs.

DR. HARVEY.—The prostate gland shows unmistakable signs of carcinoma. The retro-peritoneal glands are a good deal enlarged, and show unequivocal evidence of carcinomatous infiltration. The coats of the bladder do not show carcinomatous structure. The greater part of the polypus, if not the whole of it, is composed of mucous tissue. The thickened walls of the bladder are partly myomatous, with a quantity of material partly myxomatous. The bladder, as far as I have been able to discover, does not show any proof of carcinoma at all. The small nodules in front of the lung were found to be pneumonic and tubercular.

DR. THOMSON.—There is a curious spot in the wall of the left ventricle. It is about the size of a pea, and has the rough appearance of ordinary fibrous tissue let into the mass of the muscular wall. Dr. Harvey has not yet examined it microscopically, but in point of con-

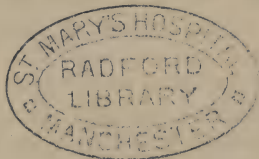
sistence it feels the same as the muscular tissue. You could not, by touching them with your finger, distinguish one from the other.

The PRESIDENT.—What was the duration of the case?

DR. THOMSON.—He had no symptoms whatever until four months ago.—*February 19, 1881.*

Melanotic Sarcoma Oculi.—MR. STORY said: This is a specimen of an intra-ocular tumour which I removed from a patient, twenty-one years of age, last September, in St. Mark's Ophthalmic Hospital. Nearly two years ago, in the winter of 1878, while playing at handball, he noticed that he could not see the ball very well on the left side. Previously his sight had been perfect in both eyes. Soon after noticing this he consulted a doctor in the country, who told him that perhaps he had night blindness, as he could see a little better towards evening. On putting his hand on his right eye he found that the sight of his left eye was dim, and that he was unable to distinguish objects until they were close to him. The sight of this eye became gradually worse, until May of the next year, when it had become quite blind. Up to this he had not had any pain. At the end of May, 1879, the eye got bloodshot, and he had scalding pain and lachrymation. He came into St. Mark's Hospital in June, 1879, under the care of Dr. Rainsford, who diagnosed cataract with marginal chorioiditis and detached retina. He said that Dr. Rainsford told him he should have the eye taken out; but as the pain and redness diminished under treatment he did not think it necessary, and left the hospital intending to return if there were any recurrence of the pain. From that time he had no annoyance, save occasional scalding pains, until the 28th of July, when he was attacked by vomiting, which lasted two days. He vomited once about two pints of dark fluid like porter; but he had eaten cherries the day before. On the 1st of August he was attacked with very severe pain, of a racking character, in the left eye and side of the head, and his eye became bloodshot. The pain was so severe that for three weeks he had no sleep. On consulting me in September, 1880, I found the condition of the right eye normal, except some slight irritability and photophobia. The left eye presented a condition of considerable vascularity, and there were two small, dark slate-coloured swellings behind the conjunctiva and above the upper margin of the cornea. The anterior chamber was empty; the tension $+2$, $V=0$; severe intra-ocular pain, and great soreness and aching on the left side of the head, with considerable stabs of pain in the occipital region. The pupil was dilated; the iris discoloured, and of a dirty brown hue; and the lens opaque. A yellowish red reflection was obtainable from the fundus, especially marked in one of the quadrants, in which my notes do not state. From the history of the case, the high tension, the ciliary staphylomata, and the detached retina, observed a

year and a half previously, I had no doubt that the patient suffered from an intra-ocular tumour, and, accordingly, enucleated the eye on the 9th of September. The anterior chamber is empty, and the iris and pupil widely dilated. There is thinning of the sclerotic in the ciliary region, and localised staphyloma extending for one-sixth of the circumference of the globe round the cornea. The retina is completely detached, and extends as a fibrous cord from the entrance of the optic nerve to the posterior pole of the opaque lens. The whole posterior portion of the eyeball is occupied by this dark tumour, which extends nearly as far forward as the equator of the globe, and completely involves the optic nerve in its mass. The length of the eyeball from before backwards was three centimetres and the breadth two and a half centimetres. The length of the solid mass of the tumour, filling the posterior portion of the eye from above downwards, was two centimetres, and the depth six millimetres. The interior surface of the tumour was concave, and it presented the normal curvature of the fundus towards the vitreous humour. It is easy to conceive that at the time it was first examined it must have been hard to determine that there was not any abnormality present at all were it not for the detachment of the retina. On examining the eye subsequently to the operation, I noticed that the surface of the cross section of the optic nerve appeared a little greyish at one side, and I am sorry to state that I have convinced myself since, by microscopic examination, that this appearance is due to infiltration of melanotic cells into the connective tissue of the optic nerve. The sheath of the optic nerve is considerably distended. The tumour is a melanotic sarcoma, consisting of normal and fusiform cells, filled with dark brown pigment of the ordinary sarcomatous structure. I have sections exhibiting the structure of the tumour, the cells, and the infiltration of the optic nerve. The infiltration is not along the sheath of the nerve, but through its substance not following the course of any definite lymph path. Five months after the operation I heard from the patient that he had no return of the disease, but I expect that after a longer period it will return either at the seat of the cells which were left in the optic nerve, or perhaps in some of the internal organs.—*February 26, 1881.*



TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1880-81.

President—J. WALTON BROWNE, B.A., M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

Fourth Meeting.

The PRESIDENT in the Chair.

Obstruction of Bowels occurring in a Case of Typhoid Fever. By ALEX. DEMPSEY, M.D., L.R.C.S.I.

THE history of the following case of typhoid fever presents no unusual feature of interest in its early career, nor, in fact, until the subsidence of the fever. The symptoms and progress of the disease were exactly similar to the average run of cases of typhoid, except that from first to last there was a tendency to constipation rather than to diarrhoea. It was the third case which occurred in the same house, and in the same family during the past year. The first case occurred at the end of January, and after passing through an uncomplicated attack recovered. The second occurred at the beginning of April, and also terminated in recovery. The third case—the subject of the present paper—was father of the two preceding patients.

He was thirty-three years of age, of dark complexion, tall, thin, and delicate. He suffered occasionally from indigestion and colic pains in the bowels. I saw him on the 17th November, 1880. He was then confined to bed for four days, but he was ailing for some days previous. The onset of his symptoms was of the usual character, and on the 19th November, or the sixth day after taking his bed, some typhoid spots were noticed on his back. He had a copious eruption of rose spots during the entire fever.

His face presented the pale, earthy hue seen in typhoid; he had tenderness in the right iliac fossa; in short, the diagnosis of typhoid fever was unquestionable. The history up to the time of the first symptoms of intestinal obstruction—the complication which set in in this case—may be seen at a glance from the temperature chart which I hand round.

RECORD OF TEMPERATURE, PULSE, RESPIRATIONS, &c.

Henry K. ; Age, 33 ; Disease, *Typhoid Fever and Obstruction of Bowels* ; Result, *Death*.

Date of Observations	Nov. 17 1880	18	19	20	21	22	23	24	25	26	27	28	29	30	Dec. 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On December 5th, or the twenty-second day after taking his bed, he was suddenly attacked with a most violent pain on the left side of and below the level of the umbilicus, which shot down into the penis and left testicle and into the hypogastric region over the bladder. I was sent for hurriedly to see him, and found him in great agony. He was doubled up in bed, crying out with the pain, and his body was covered with a cold, clammy sweat. He had neither vomiting nor purging. There was no pain on pressure over abdomen. Pulse, 126—weak and compressible; temperature, 102·5°. His eyes were glassy and staring. He had one motion a short time before the occurrence of pain, and one on previous day. There was some tympanites previous to this attack of pain, but not to any great extent. He had been taking plenty of nourishment and 8 oz. of wine in twenty-four hours. I had on two or three occasions previous to this to administer castor oil, because bowels would be unmoved for three or four days. I now ordered turpentine stupes and warm linseed poultices, and a grain of opium every hour until relief of pain. After taking three pills the pain left, and he fell asleep.

6th.—Pulse, 130; temperature, 102°; perspiring freely—but this has been the case for some days; abdomen very much distended with flatus; slight pain on pressure at left of umbilicus; expresses himself as feeling very well. I prescribed an aromatic mixture and ordered turpentine stupes to be repeated. No motion since yesterday.

7th.—Pulse, 114; temperature, 99°; had a bad night; breathing is laboured; he is restless, but quite sensible. Up till yesterday he raved very much. Abdomen is more tympanitic, and the coils of intestines can be seen through the abdominal walls. To-day, besides the pain at left side of umbilicus, there is also pain over a small area to the right side of umbilicus, but it is only felt on pressure. He is much annoyed with flatus coming off the stomach, but he has no vomiting. His bowels have not acted since the 5th. I gave an enema of castor-oil, turpentine, soap and water, and prescribed turpentine, ether, and opium draughts, and directed hot poultices to be kept constantly over abdomen, and 1 oz. of whisky every third hour.

8th.—Pulse, 108; temperature, 100°; has vomited several times since; tympanites continues unabated; enema brought away no motion and very little flatus; very little pain on pressure to-day, and only at left of umbilicus. Gave him another enema of assafœtida, soap, and water. It was soon passed down, and only brought some flatus with it.

I saw him again this evening, with Dr. Harkin. Pulse was 108; temperature, 98·5°; vomiting was continuing. We prescribed bimeconate of morphia, solution of bismuth and hydrocyanic acid; gave another enema, and a hypodermic injection of morphia.

9th.—Pulse, 102; temperature, 99°; vomited every half-hour during

the night, and the vomited matters are distinctly fæcal in colour, smell, and consistence. I gave another large enema of castor-oil and turpentine, and prescribed pulv. opii gr. i. and ext. belladonna gr. $\frac{1}{4}$ every second hour, and administered a hypodermic injection of morphia.

10th.—Pulse, 120; temperature subnormal; fæcal vomiting continues; no motion after enema. He is sinking. I gave an enema of brandy, egg, and milk.

He died the following day, December 11th, at 1 30 p.m., having vomited until a few hours previous to death, and on the twenty-eighth day after taking his bed, and on the seventh day from the attack of acute pain.

Now the only two other complications which might be confounded with obstruction in this case are peritonitis from perforation and the vomiting of exhaustion.

The symptoms during the time of acute pain did not exactly correspond with those usually attending perforation; they resembled more the passing of a calculus along the left ureter, but there was no retraction of the testicle, and the pain was more severe along the penis and lower part of the abdomen than in the testicle. There was no difference in the appearance of the urine as to quantity or quality following the attack of pain from that preceding it. There was no desire to micturate. The pain did not start from the region of the kidney, but just beside and below the umbilicus.

The acute pain subsided pretty quickly, and there did not appear at any time any symptoms of general peritonitis as far as the patient's feelings were concerned. Though he was quite sensible, pressure over the abdomen only elicited pain at the point from which originated the acute pain on the first day of attack, and pain on pressure remained at this point till the last. Only on one day was pain on pressure felt on the right side of the umbilicus.

Again, fæcal vomiting is very seldom seen in peritonitis. Murchison, in his book on Fevers, says he observed it only once. The vomiting did not occur until two days after the attack of acute pain, and it was preceded by intestinal distension and frequent eructation of flatus. In perforation vomiting usually occurs at the time of the accident. He was able to turn pretty easily on his side to have the enemata administered, but the enemata, if large in quantity, usually caused him a good deal of pain, and if the tube was introduced too high up, pain was also complained of. His pulse had not the thready feel of peritonitis, and his countenance, though anxious and careworn, had not the pinched appearance seen in peritonitis.

As to vomiting from exhaustion, I am not aware that it becomes fæcal in character; but the great argument in favour of obstruction as against peritonitis and vomiting of exhaustion is the fact that no motion

was passed from the bowels for seven days, notwithstanding repeated efforts by enemata for that purpose.

Taking the age of the patient, I think the probabilities are it was due to an internal hernia either in the form of a volvulus or from a constricting band, but in the absence of a *post mortem* examination we can only conjecture. The reason I lay so much stress on the differential diagnosis is because in any works I have consulted on typhoid fever no mention is made of intestinal obstruction as a complication.

Flint relates the case of a child dead from typhoid fever in which were found numerous invaginations, but he believed them to be *post mortem*. In my case it may have been an accident or a coincidence, but I think when you have intestines distended with more or less flatus, as is usually the case in typhoid fever, the movement of this flatus may very readily push a piece of intestine into a constriction, if such exist, or may cause a volvulus; and in the present case there was a history of occasional attacks of colic which may have been due to localised peritonitis, resulting in adhesions.

DR. DILL commented upon the case. He thought, for a Society like the one assembled, great benefit was found to follow an ordinary case being brought before them. Clinical curiosities were good in their way, but he learned more from a paper like the present. He went into the diarrhoea of typhoid, and said his experience told him that decidedly constipation was more frequent and troublesome than diarrhoea in typhoid fever. He always directed his attention to the state of the bowels, and pointed out how many evils arose from neglect of enemata and mild purgation. He said he believed the case ended as a case of perforation of the bowel.

DR. WALES felt at a loss to account for the locality of the severe pain unless by supposing that a calculus descended. He did not, however, believe that this had anything to say to his death, which he believed was owing to perforation.

DR. McHARRY thought death occurred from simple obstruction owing to impaction, and from it he would take the lesson to always keep the bowels free and use purgation when absolutely required.

DR. J. W. BROWNE found that in all his hernia cases, when perforation occurred, vomiting ceased. He would have thought that abdominal section, as a *dernier ressort*, should have had a chance.

The Medical Charities of Belfast: their Uses and Abuses. By ROBERT ESLE, M.D.

MR. PRESIDENT AND GENTLEMEN,—The world is full of charity—a large number of the population of every country live upon charity; but amongst civilised peoples, and in Christian communities, charity has been reduced to a system, and extolled high among the virtues.

There are organisms—developments of brain and heart—that cannot but sympathise with suffering and want, and their natural sympathies find outlet in giving of their alms—some, in accordance with their nature, accompany their giving with blowing of trumpets, while others scarcely let their right hand know what their left hand doeth. Charity is not confined to or monopolised by any one class of society. The queen, the prince, the noble, give their thousands, the mercantile and middle class their hundreds, while the labourer and artisan's gifts must be measured by the smaller coins of the realm; nor is money always the medium of expression—one may go an errand of mercy, another pass a night in silent watching.

There are marked lines of distinction in this virtue among the various sections and professions in society, but I think I may safely say that members of the medical profession stand to-day, as they have always stood, in the first rank of benefactors to the suffering and the poor. There is no profession can claim to have done more for humanity in alleviating its suffering, supplying its wants, and mitigating its woes in their *individual* capacity than that of our own; yet much of the individuality has of late, and especially in the centres of population, been swallowed up by the introduction of a system of hospitals, which, useful and valuable as they are, threaten at no distant day to greatly interfere with the honest income without which even a philanthropic physician or surgeon cannot exist, unless family or fortune has provided a secure and independent living.

My object in bringing this subject before the Society is not so much to give you any information about the details of our charities as to point out the dangers which I think the system fosters, and to stimulate discussion, which may lead to some practical results.

We have been accustomed to hear from time to time at our various gatherings a wholesale and very general denunciation of the abuses arising out of the practices adopted in carrying out the charities of this town. I wish, in examining this subject, to distinguish between the *uses* and the *abuses* of our hospital system.

A great many of our so-called charities must of necessity be excluded as they are not properly charities at all. There is the poor law system, which is often classed with the medical charities. The poor law provision for attendance on the poor is in no sense a charity. It is the right of the ratepayers according to our constitution to provide for the wants, medical and otherwise, of the suffering and destitute, and however imperfect the system may be, still medical officers of health are remunerated in such a way as to leave no great room for grumbling. There is, no doubt, a large amount of work done for the amount of money received, but still it is money earned honestly and independently. The so-called charitable or benefit societies have so grown and multiplied that an

enormous proportion of the artisan class are included. Many of these people are over-doctored. A man may be a carpenter and a Rechabite and have a different doctor from each society, and if he should happen to be an Orangeman as well, and perchance an Oddfellow, he may have a skilled physician for each of his principal organs; but then he pays for each, and whatever the amount may be, large or small, he has a right to get his bargain, and with him we do not quarrel. There is again the factory class, which by payment of a small weekly sum asserts its independence, keeps away from the dispensary, and on the whole gives fair remuneration to the doctor.

Now, none of these classes come much to the public hospital, and yet these constitute the major portion of our population. Where the hands in a large employ constitute themselves into a society and pay for medical services, and where a medical man undertakes to give his services for a certain remuneration, I think they are on the right lines to preserve their independence, and are not guilty of medical abuse.

Hospitals are in our midst, have been, and are, increasing amongst us. It is a fair subject of inquiry—What class of patients are they treating? what class of patients ought they to treat? and what is likely to be the outcome of the present practice as far as the public and the profession are concerned?

I will try and confine myself to general statements rather than enter into details, but general statements based upon facts so well known as to make them undeniable.

The public hospitals of Belfast are—the Royal Hospital, the Ophthalmic Hospital, the Ulster Eye and Ear Hospital, the Samaritan Hospital, the Skin Hospital, the Belfast Hospital for Sick Children, the Ulster Hospital for Children, the Lying-in Hospital, the old Charitable Institution, with the Dispensary for Chest Diseases, &c., &c.

First comes the Royal Hospital. It is first in importance, in extent, and, I will add, in its usefulness and its abuses. As a school of medicine—equipped with a medical staff of teachers, who devote much time and attention to the students and the patients—the Royal Hospital stands deservedly high; but for its locality and its departmental deficiency it might stand much higher. It is not by any means the fault of the medical staff that it has not kept pace with the progress of the times, and that, as special subjects have been prominently coming to the front, its narrow-minded and blindly conservative managers should have obstinately refused to equip the building with special departments as a school of medicine. Had this spirit not existed I venture to assert that few of the special hospitals now in existence would have yet been built. Is it yet too late to think of adding a wing for diseases of women and children, skin, eye, and ear? The student is thus placed at a great disadvantage in having to go elsewhere to see what should be

seen and learned under the same roof of a great hospital. As a useful institution, for the treatment of certain persons and certain classes of cases, no one will find fault with the Royal Hospital—for instance, serious accidents, requiring capital operation and a long time of attendance, with skilled nursing, are admissible. Again, obscure cases, demanding the diagnosis of skilled and experienced hospital physicians and surgeons, should be admitted; a class of poor persons above the pauper has a right to the charity of the subscriber; the poor sailor and similar ill-paid benefactors of mankind should be heartily welcome. But that because the Royal Hospital is a public charity, supported by public contributions, and attended, without fee or reward, by medical men, it should admit all comers—men with incomes which would enable them to pay a moderate, nay, in some cases, a handsome fee—and that they should eat and drink and be treated gratis, is, I maintain, an utter abuse of charity. I venture to make this statement:—That a large proportion of the cases admitted to the wards of the Royal Hospital *free*, are such as should be made to *pay*, and those who do pay, are charged rates much below what their means would warrant. In coming to look into the extern department it must be admitted that a great deal of useful work is done, and, it may be conceded, well done; but it is in this department that the most glaring abuses are met with—abuses which pauperise the community and interfere very greatly with the practice and the income of the general practitioner. It is here that reform ought to commence, and I do not think it is too much to demand for the profession that the committee of management should be called upon to confine their work within the limits of charity, and not in a wholesale, aboveboard, and even ostentatious way, for the sake of gaining public favour and applause, trample upon the sphere and directly interfere with the income of those whose very existence for some years depends upon such practice, and such fees as would arise from the work done in this extern department, for I will venture to affirm that more than half of all the patients treated are quite able to pay a small fee—such a fee as will be accepted at a private surgery. The Report just issued shows the total number treated extern—14,867. Who will say that 10,000 of these could not pay a shilling for advice and medicine, or for surgical dressing? and taking each as being attended to twice, a thousand pounds is thus kept out of the pockets of the general practitioner.

The next Belfast charities we have to notice are the special hospitals known as the Benn Charities, with which may be classed the Ophthalmic Hospital. There can be little doubt but that these charities, situated as they are, and under separate management, are the outcome of the dog-in-the-manger policy of the former managers of the General Hospital. Science was progressing; special departments were recognised and being

introduced in nearly all the leading hospitals in England and the Continent; young medical men of talent, and with special training, wanted a field for observation and work, but over the portals of the medical school of this town was written large "No admission here." But *mind, spirit, soul*, cannot be fettered even by obstruction chains forged in do-nothing workshops. Hence one man, and another, and another find a platform from which to speak and teach, and the language to-day is unmistakable—"Nothing succeeds like success." I will not differentiate among these hospitals. They are all worked on the same general principle; they are nearly self-supporting; and while all are not perhaps equally careful to prevent abuse, yet the safeguards are of such a kind that, in the hands of men of high principle and good practical common sense, I am satisfied they will not do anything to abuse the spirit of true charity, nor infringe on the domain of the general practitioner. Regarding the practice of receiving pay patients, there is, I imagine, as much room for abuse as in the admission of free patients. A class above those who are entitled to receive hospital attendance are induced to come, or excuse their rank and position by coming and paying a fee, however small, for admission or medicine. To prevent this abuse it lies with those at the portal of admission to institute rigid inquiry. I am decidedly of opinion that the public receive more benefit and the profession suffers less injury from the purely special hospitals than from the more general. It is an advantage to the general practitioner to have the opinion of a specialist, when it is known that his terms are such that the patient is not likely to be induced to leave his ordinary attendant.

And now, coming to the two Hospitals for Children, I will not enter upon the questions—Why there are two? Whether there be room for two? Which was first in the field? Which excels in usefulness or abuses?—but deal with both as they affect the public and the profession. In these hospitals there are some 12,000 children seen every year, with twice that number of attendances. That they do a large amount of useful and important work is certain; that a large proportion of that work is a relief to the dispensaries there can be no doubt; and that very many of the miserable mothers who bring their children cannot afford to pay anything I am thoroughly convinced. One of these hospitals has an evening hour three times a week, which is especially useful to mill-workers and others engaged in labour through the day. I think the abuses are less at this particular time than on other occasions, but I am not prepared to say that there are not, on every occasion the doors are opened, *some*, and on some occasions *many*, who *could*, and who should be made to pay at least for medicine; and I do think the time is not far distant when the profession should take a stand and put some check on the wholesale way in which patients are drawn into the net of so-called

charity. For abuse and infringement on the domains of the open surgery I class the Children's Hospitals with the extern of the Royal. In my opinion about half of the patients of both should be sent about their business, and thus the profession would benefit to the amount of £2,000 a year, and the independence of the community would be preserved.

Of the Lying-in-Hospital I may only say that its usefulness I will not question—of its abuses I have never heard.

Provident Dispensaries have not succeeded in our midst, and I am doubtful if they ever shall. Where they are established, I am told, they are generally looked upon as the flag of distress of some needy and often half-qualified medical man.

The Belfast Charitable Society is, I believe, the oldest hospital in Belfast. It was incorporated in 1774, but, as it is not a public hospital, does not come within our criticism.

I cannot close this paper without glancing at the question of how much individual members of the profession are benefited from their connexion with an hospital; and, first, that the appointment to the Royal Hospital has been the making of the reputation of some of the staff I think not unlikely. We cannot suppose, and I dare not venture to assert in this Society, that superior talent or attainments are to be found in all the members of an hospital staff, or perhaps in any of them, to that met with in others who have no appointments, but by this means they have a large field for observation, and are brought into contact with the students who in time call in their old teachers as consultants, and in this way members of an hospital staff profit.

There is a great temptation to extern workers to get all the patients they can, and thus extend their observation and connexion. I do not blame them, but as a disinterested member of this Society I must express my opinion that the usefulness to the few must not be allowed to create abuses which extend to and interfere with the many.

As far as I can see the chances for a young man making a practice with the present state of things is one of slow, trying, laborious work. What, between necessity on the one hand, and an over-doctored, pauperised population who are being taught not to pay, on the other, the description of a young beginner is very much like that of the Patriarch regarding Issachar: "A strong ass crouching down between two burdens."

The great advantage of an appointment in a special hospital is to fit a man for that special work, and to extend his reputation in that branch if successful.

In a Children's Hospital one is made familiar with the various phases of children's diseases, and only in this respect is it remunerative. Experience brings confidence, and a consciousness of knowing one's work is both pleasurable and profitable.

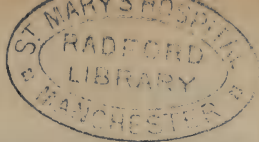
The conclusions I would adduce are: That a large public hospital is necessary for the purpose of teaching, and the treatment of urgent and deserving cases, and that it should be fully equipped with special wards, appliances, and every necessary accommodation so as to facilitate the work, and save the time of both teacher and student. That the cases treated in hospital should be from such classes of the community as will at once benefit the suffering, economise the funds placed at the disposal of the managers, and not interfere unduly with the patients of private practitioners. That there are abuses in the working of the out-patient department of all the hospitals, and that the time has now come when this Society should direct the attention of the managers of the various charities to this matter, and request them to put such checks on admission as will prevent a continuance of these abuses.

IODIDE OF ETHYL IN ASTHMA.

THE *New York Medical Journal* for June, 1881, publishes three cases of asthma treated with inhalations of iodide of ethyl, with remarkable benefit. They occurred in Dr. R. M. Lawrence's service at the Boston Dispensary. Following the cases are some remarks by Dr. Lawrence, in which he says of the iodide of ethyl:—"Its speedy absorption into the blood, its antispasmodic quality, and prompt reflex stimulation of the respiratory muscles, may reasonably account for its beneficial action in the asthmatic paroxysm, while its power of liquefying and detaching accumulations of mucus sufficiently explains its curative influence in chronic bronchitis. . . . Experience has confirmed my faith in its remedial worth in a large majority of cases of laboured respiration (whether due to bronchial spasm or to increased mucous secretion), and also in certain obstinate cases of dyspnoea, not due to organic pulmonary or cardiac lesions, where other remedies may have proved inefficient. In a small minority of cases it has failed to afford relief." He does not recommend it as a substitute for internal medication, but rather as an adjunct thereto.

ALBUMEN WATER.

RECOMMENDED as a good substitute for milk and beef tea, in cases where these substances disagreed with the patient, or could not be obtained. The preparation is largely used by the French. It is made by dissolving the white of one or more eggs in a pint or two of water, sweetening with glycerine, and flavouring with orange-flower water. It may be taken cold and used *ad libitum*. It is an excellent food in typhoid fever and typhoid dysentery.—*Chemist and Druggist*.



CLINICAL RECORDS.

Case of Typhus Fever, with Sudden Supervention of Death on the Ninth Day.

By LESLIE MATURIN, L.K.Q.C.P.I.; Physician to Kilmainham Fever Hospital.

ROBERT T., labourer, married, aged forty-two years, was admitted into Kilmainham Fever Hospital under my care on July 14, 1881. The patient—a strong, muscular man—had been ill since July 10, four days before coming into hospital. On admission he complained of intense headache and pains in the calves of the legs; his tongue was moist and slightly furred; the body was covered with perspiration; temperature in the axilla, 103° Fahr.; pulse 110, full and strong. The eruption, mostly confined to the abdomen, groins, back, and ankles, was by no means plentiful. The *Facies typhosa* was not well marked; the conjunctivæ were clear; he had no appetite, and complained much of thirst and of a bad taste in his mouth. The chest and heart sounds were healthy. He was in good spirits, and said he was quite well but for the pain in his head. He was ordered beef-tea, milk, arrowroot, and a mixture containing dilute phosphoric acid every third hour, with cold evaporating lotion to the head.

For two days subsequent to admission he continued to do well, sleeping much and taking nourishment. On the 16th he was very restless during the day; the headache had disappeared, but his ideas were confused, and his manner was furtive and sullen when spoken to. His hair was ordered to be cut off, to which he positively refused to submit. As evening approached he became noisy and talkative, could with difficulty be kept from getting out of bed, and would not allow an ice-bladder which was applied to the head to remain. He became rapidly more intractable, and about 9 30 p.m. was in a state of wild delirium, requiring the united strength of four men to keep him in bed, calling "Murder" and "Police," that "he was in hell and that the devil was holding him down." The carotid and temporal arteries pulsated violently, the conjunctivæ were injected, the pupils were dilated, his appearance was fierce and defiant, and he bit and spat at everyone within his reach. I found it necessary to put him in a canvas jacket as a means of restraint. I had his head shaved, and endeavoured to apply leeches to the temples and behind the ears, but for some reason they would not adhere. I then abstracted four ounces of blood from the region over the mastoid processes by means of an artificial leech, and his head being held over the side of the bed I poured two large ewers of iced water upon the vertex from a height of about three feet. These measures somewhat quieted

him, and in addition I ordered 10 minims of tincture of opium and gr. $\frac{1}{4}$ of tartarated antimony in one ounce of camphor-water every hour until sleep was induced. I administered it with the spout of a feeding-cup through a gap left by the loss of one of the upper central incisors; several times he spat it out, but by compressing his lips and making slight intermittent pressure upon the larynx I succeeded in administering three doses, after which he slept from 2 to 7 o'clock a.m., the conjunctivæ half covered with the lids, and breathing heavily. During the day he was quiet and rational, sleeping on and off, and taking his food. The pulse, 110, was full and soft; temperature, 102.5° Fahr.; and he passed urine in the bed. I ordered him 6 ounces of brandy, and had the jacket removed. He took his food well, and slept during the night from 10 till 4 the following morning.

On the 18th he seemed to be doing well; the pulse, 110, was soft and compressible; both sounds of the heart distinct. Brandy increased to 10 ounces. At 2 35 o'clock the nurse came to me and asked me to look at him, that he had suddenly become worse. I found him dying. He was completely comatose, and lay extended at full length upon his back, the forearms semiflexed upon the abdomen. His pulse was imperceptible; the surface of the body, which was cold and covered with a clammy sweat, was of a dark purple colour; the features were drawn and pinched; the respirations, about twelve in the minute, were laboured, and the inspirations jerky; the left pupil was fully dilated, the right to a less extent. With every third or fourth inspiration the body became partly opisthotonic, and the arms were forcibly adducted across the thorax. There were no convulsive movements of the face, forearms, or extremities. The respirations became slower, the muscular contractions fewer, and he died without a struggle at 2 48 o'clock, thirteen minutes after the first appearance of the symptoms.

I made an examination of the body nineteen hours after death. The dependent parts, as also the ears, neck, and scalp, were of a dark livid colour. The abdomen was of a greenish hue, and there were two gaseous bullæ on the left side of the thorax. The maculation had faded everywhere but about the ankles, where it was of a dark purple colour. The rigor-mortis was well marked and the pupils were dilated. On removing the calvarium the veins of the dura mater were much distended. The arachnoid contained about 2 ounces of clear fluid. The veins of the pia mater were much distended, the puncta vasculosa were numerous, and the veins of the chorioid plexus were engorged. The brain tissue was firm and healthy throughout, and the lateral ventricles contained only a slight amount of fluid.

The muscular structure of the heart was firm, and the cavity contained a quantity of fluid blood. On slitting up the aorta I found a firm yellowish clot, about two inches in length and about the thickness of

the shaft of a stethoscope, partly lodged in the sinuses of Valsalva, and projecting between the aortic valves into the ventricle. The posterior portions of both lungs were engorged, but crepitant. The colon was much distended with flatus. The liver and spleen were healthy, the gall bladder contained about 2 ounces of bile. The stomach, intestines, and kidneys were healthy, and the bladder was empty.

I am uncertain to what cause death was attributable in this case. Were these peculiar convulsive movements of a uræmic origin or dependent upon cerebral effusion? Unfortunately I was unable to obtain any urine for examination. But, under either circumstance, why was life terminated so speedily? Was the clot an *ante* or a *post mortem* formation? I could detect neither heart sounds nor murmur upon applying the stethoscope over the cardiac and aortic regions, and there was no dyspnœa or any of the urgent symptoms consequent upon the formation of a coagulum. Will paralysis of the sympathetic system, upon which the hyperæmic condition of the cutaneous capillaries was doubtless due, terminate life in 13 minutes, and to what is its *sudden* accession due? Or could the pressure of the distended colon acting upon the already enfeebled heart have terminated its action in so sudden a manner? The causes of death in typhus are generally well defined, but the evidences in this case are ambiguous.

A Case of Atresia Vaginæ of Seventeen Years' Duration. By WILLIAM ALLAN, L.R.C.S.I., L.M.; Assistant Colonial Surgeon, &c.

S. G., aged eighteen, a native girl, was brought to me by her friends in May, 1881, for examination, and to obtain medical relief. She presented the appearance of great physical suffering, and had an aged and worn expression. Owing to the great abdominal pain she could scarcely walk or maintain the upright posture. She was of very slight build, and evidently in bad health. The breasts were full and well developed. She complained of the presence of a tumour in the abdomen, which was accompanied with intense pain, with pains in the back, and constipation. I made an abdominal examination, and found a firm round tumour occupying the hypogastric and umbilical regions, the tumour being grasped, so to speak, by the rigid abdominal walls. I obtained the following history from one of her relatives:—When twelve months old she got a number of sores in the regions of the anus and vagina, the scars of which were plainly visible. One of these sores, probably an abscess (abscess being very common among these people), occupied the genital canal, and on healing gave rise to occlusion of the vagina. When sixteen years of age—about the period when Nature would assert herself—she complained of a small painful tumour in the abdomen, which gradually increased in size from that time until she came under my care, when it was fully as large as a six months' pregnancy. No

menstrual flow having taken place, I examined the genital organs and found the vulva, and beyond, completely occluded, the parts presenting the appearance of an anus. Rectal examination revealed the presence of a large tumour lying within a few inches of the anal orifice, very firm, and having large vessels running in its walls—this, of course, being the enlarged and distended uterus, which by its pressure gave rise to lumbar pain and constipation. Dr. Atthill, in treating of this subject, relates a case of total absence of the vagina and states that “lesser degrees of atresia are, however, more frequent, and afford fair promise of being benefited by operation; and as serious consequences, and even death, are likely to result if an exit for the menstrual fluid be not obtained, the attempt to reach the upper portion of the vagina by a careful dissection is certainly warranted.”

No relief being obtainable otherwise than by operation, I at once had her placed under chloroform, and taking the small urethral opening in the anterior wall as my guide I made a careful dissection in the axis of the canal, and eventually found my way into the upper portion of the vagina, when, withdrawing the knife, I introduced my left forefinger to dilate the opening already made. On withdrawing my finger a rush of dark coffee-coloured fluid took place, draining away to the amount of 60 ounces. During the discharge of this grumous fluid I passed my finger, well oiled, per rectum, to support the body of the uterus, and thus assist free discharge. The canal was then syringed out with Condyl's fluid, and an oiled plug placed in the vagina, a napkin and roller being also applied. She was put on a pill containing half a grain of the extract of opium with 2 grains of quinine (which was afterwards increased to 3 grains), one every third hour, rest in bed and liquid diet. On the second day after operation she complained of great pain in the ovarian regions, the temperature rising to 102.8° ; respiration 60, panting and thoracic; pulse 126. To ease the pain hot poultices were applied, and an opiate draught given at bedtime. The daily treatment consisted in syringing out the vagina, morning and evening, with Condyl's fluid; putting in a vaginal plug, made of lint and saturated with carbolised oil; pain and restlessness being combated by hot poultices and opium. The quinine, in pill, was continued for eighteen days, quinism being produced. The diet was at times modified to suit the wish of the patient, consisting mainly of rice, arrowroot, eggs, soup, tea, and bread. On the forty-fifth day after operation the menstrual molimina came on, the flow taking place freely on the forty-sixth, forty-seventh, forty-eighth, and forty-ninth days. During the period of treatment she improved wonderfully in facial expression and physique. Regarding the use of quinine in these cases, beside the antiseptic property possessed by the drug, Dr. Atthill considers it has a further and specific action on the uterus. He refers to it as being perhaps the most valuable agent we possess next to ergot.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday,
August 13, 1881.*

Towns	Population in 1881 (Unre- vised)	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	348,525	767	559	—	5	6	3	4	32	13	20·9
Belfast, -	207,671	564	310	—	1	1	—	4	7	19	19·4
Cork, -	78,361	157	122	—	2	1	—	1	8	4	20·3
Limerick, -	38,600	80	55	—	—	2	—	—	1	2	18·5
Derry, -	28,947	77	43	—	1	—	—	1	2	2	19·3
Waterford, -	22,401	57	35	—	—	—	—	—	5	—	20·3
Newry, -	14,782	49	17	—	—	—	—	—	2	2	15·0
Galway, -	14,621	34	18	—	—	—	1	—	—	—	16·0

Remarks.

In the foregoing Table Newry has been substituted for Sligo, as the former town is the seventh in Ireland in respect of population. The Table, therefore, now contains statistics of births and deaths in the eight largest towns in Ireland. The annual rate of mortality represented by the registered deaths was generally low—the highest being 20·9 in Dublin. The death-rate was 23·4 per 1,000 of the population annually in the twenty chief towns of England, only 19·6 in the sixteen principal town districts of Ireland, 24·4 in London, 21·7 in Glasgow, and only 15·7 in Edinburgh. Omitting the deaths of persons admitted into public institutions from localities outside the district, the death-rate in the Dublin registration district was 20·2 per 1,000, while within the municipal boundary it was 22·6. The cool, breezy, rainy weather had a marked beneficial effect upon the public health in Ireland. In Dublin zymotic diseases were credited with 81 deaths, compared with an average of 127·6 in the previous years. The most fatal was fever, to which 32 deaths were referred. Of these 16, or exactly one-half, were caused by typhus and 12 by typhoid. “Simple fever” was returned as the cause

of death in four instances. Fever continued to be prevalent in many of the Irish towns, but no death from smallpox was recorded. Diarrhœa was rather fatal in Belfast (19 deaths), but in no other town does its prevalence or fatality call for special remark. In London the case is very different, for during the four weeks 1,451 deaths from diarrhœa were registered. Cooler weather in the last week of July checked the epidemic of this disease in the metropolis; this will be seen by a reference to the number of deaths each week. They were 449, 495, 297, and 210 respectively. The smallpox epidemic in London showed a further decided tendency to abate—the deaths numbered 149, against 262 in the previous four weeks. Diseases of the respiratory organs caused 65 deaths in Dublin, compared with a ten-years' average of 69·7. Bronchitis proved fatal in 43 instances (average = 45·6), pneumonia in 9 (average = 13·8). On Saturday, August 13, there were no cases of either smallpox or measles under treatment in the principal Dublin hospitals. Of scarlet fever there were 19 cases, of typhus 65, of typhoid 1 case, and of pneumonia 7 cases.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of July, 1881.*

Mean Height of Barometer,	-	-	-	29·960 inches.
Maximal Height of Barometer (on 14th at 9 a.m.),	-	-	-	30·215 „
Minimal Height of Barometer (on 31st at 9 a.m.),	-	-	-	29·373 „
Mean Dry-bulb Temperature,	-	-	-	60·3°.
Mean Wet-bulb Temperature,	-	-	-	56·1°.
Mean Dew-point Temperature,	-	-	-	52·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·394 inch.
Mean Humidity,	-	-	-	75·9 per cent.
Highest Temperature in Shade (on 17th),	-	-	-	76·6°.
Lowest Temperature in Shade (on 27th),	-	-	-	44·8°.
Lowest Temperature on Grass (Radiation) (on 27th),	-	-	-	41·0°.
Mean Amount of Cloud,	-	-	-	64·4 per cent.
Rainfall (on 15 days),	-	-	-	1·863 inches.
Greatest Daily Rainfall (on 30th),	-	-	-	·601 inch.
General Directions of Wind,	-	-	-	S.W., W., & W.N.W.

Remarks.

This month was characterised by almost continuous S.W. and W. winds, which often blew with considerable force in Ireland, and consequently rather changeable weather was experienced. Generally speaking, the month was much warmer and more summerlike in England, in the south-east of which country and in France the heat was at times tropical in its intensity. The first few days were very fine. On the 4th the

thermometer rose to 75.6° in Dublin, but this fades into insignificance compared with the tropical heat felt in England and France. On the same day the maxima were 104° at Rochefort, 99° at Biarritz, 95° at Lorient, and 87° at Yarmouth, at Nottingham, and in London. Next day (the 5th) the thermometer reached 92° in London. At 3 p.m. of this day a thunderstorm broke over Dublin, having been preceded for some hours by the appearance in the sky of dense, highly electric cirrocumuli clouds. At night the thunderstorm raged all over England, doing much damage to life and property. Next day a brisk N.W. wind sprang up, causing the temperature to fall 20° . In Dublin the maximal temperature on the 6th was only 59.5° . A few days of changeable weather followed, but it became fine and warm after the 9th. In England and France the heat on the 14th and 15th was tropical—the thermometer rising on the latter day to 90° at Nottingham, 91° at Cambridge, 95° in London, 97° at Greenwich Observatory, 99° at Lyons, and 100° at Biarritz. After the 15th the weather became cooler for a short time, but the 17th was the warmest day of the month in Dublin, where the thermometer rose to 76.6° in the afternoon, and did not go below 63.6° during the following night. The 19th was ushered in by a fall of rain in Dublin, but the great heat continued in England and France until the 20th, when the weather became cool generally and permanently. A thunderstorm with heavy hail passed over the southern suburbs of Dublin on the afternoon of the 24th, and thunder with heavy showers occurred also on the 26th. The night of this day was very cold, the thermometer sinking to 44.8° in Dublin and to 41.0° at Parsonstown. The heaviest rainfall of the month ($.601$ inch) occurred on the night of the 30th–31st. Solar halos were noticed on the 2nd and 19th. The mean temperature was slightly above the average.

APOMORPHIA AS AN EXPECTORANT.

DR. BECK has used apomorphia as an expectorant with excellent results for two years, and feels impelled by his success to report his method of treatment to the profession. As regards dosage he gives about a milligramme [gr. $\frac{1}{68}$] of the best crystallisable apomorphia to children of eleven years and younger, every two or three hours; for older children he increases the dose to one and a half milligrammes [gr. $\frac{1}{44}$], at the same interval. To adults he usually gives the following: R. Apomorphiæ muriat. (cryst.), 6 centigrammes [gr. j.]; acidi muriat. dil., 1 gramme [m xv.]; aq. destill., 120 grammes [℥ iv.]; syr. simp., 30 grammes [℥ j.]. M. Sig. One dessertspoonful every two or three hours. The author reports excellent results from the use of this prescription in sixty cases of catarrhal bronchitis and thirty-one of bronchopneumonia.—*Dtsch. med. Woch.*, and *N. Y. Med. Jour.*, June, 1881.



PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

IODOFORM AS A DRESSING IN JOINT AND BONE TUBERCULOSIS, &c.

At the recent Surgical Congress, held at Berlin, Dr. Mikulicz read a paper on the above subject which was a short but interesting report of a series of thirty-six cases occurring in Professor Billroth's clinic, where this treatment was used. This series includes cases of disease of nearly all the large joints, the hip, knee, ankle, elbow, &c., and many chronic abscesses connected with diseased bone. This form of treatment was first proposed by Professor Mosetig-Moorhof, of Vienna, where the method has been quite generally adopted with the most satisfactory results. The use of iodoform as a dressing of unhealthy wounds has long prevailed, but now it is used somewhat differently, and much more thoroughly. In joint diseases, caries, cold abscesses, &c., the diseased bone, fungous granulations, and other abnormal tissues are removed with knife or curette, the cavity thoroughly washed out with carbolic acid or thymol, and *entirely filled* with iodoform. A usual dressing of gauze and Mackintosh is then applied over all, and the part immobilised by means of an organtine bandage. Unless the discharge soaks through the dressing it is not removed for one, two, or even three weeks. The results obtained have been remarkably good, cases having been cured that would have been amputated under the older methods of treatment. The iodoform diminishes the secretion, prevents its decomposition, and prevents the formation of tubercle in the granulations or destroys them if they are already present. This specific local action on tuberculous granulations has been repeatedly observed, portions of the tissues being examined microscopically before and after its use. This may easily be observed where the granulations have not been first removed. This observation of the action of iodoform upon tuberculous masses with which it is in contact, led to the trial, in Professor Billroth's clinic, of injecting an ethereal solution of iodoform into joints in the early stages of fungous inflammation, and into other suspected tuberculous swellings. A solution of iodoform in ether, one part to five, is injected with a hypodermic syringe directly into the joint or tumour in several places, one or two syringes full being used. The ether is immediately absorbed, and the iodoform is left in substance in contact with the diseased tissues. This method has been too short a time in use to allow judgment to be passed on its merits, but in the large number of cases where it has very recently been tried, no inflammation or irritation has followed, and in

some cases there has been a decided decrease in the swelling. Iodoform is also used in all wounds connected with the mouth, intestine, rectum, vagina, &c.—in fact in all places where a disinfectant and antiseptic is needed where carbolic acid cannot conveniently be used. Thus, in recent tongue and partial larynx excisions, and in cancers of the mouth, iodoform has been used as a dressing, a piece of gauze plentifully sprinkled with the powder being packed against the wound. This completely checks all tendency to decomposition of the secretions, and no odour can be perceived, thus rendering unnecessary the hourly washing out with permanganate or carbolic solution. Iodoform is apparently absorbed but little, and no toxic effects have been observed beyond a slight nausea in thirty-six to forty-eight hours in a few cases, even this symptom immediately disappearing. Dr. Mikulicz described a series of experiments made by him on the antiseptic action of iodoform. He found that when added to urine or solutions of animal matter it did not entirely prevent the formation of bacteria, but the solutions remained without smell or signs of decomposition. In blood the bacteria appeared in smaller numbers, and much more slowly, probably on account of the solution of a part of the iodoform present by the fatty matter contained in the blood. Professor Gussenbauer spoke of nineteen cases in which he had resected the larger joints for disease, the after-treatment being with iodoform. In one case the whole calcaneus was removed, and the cavity filled with two hundred grammes of iodoform. The dressing was changed but once a month, and the wound healed. He considered his results in these cases much better than could have been expected with the usual treatment.—*Boston Med. and Surg. Jour.*, May 26, 1881.

RESECTION OF THE ANKLE.

DR. MIKULICZ has described a new osteo-plastic resection of the ankle. The operation is as follows:—An incision is made through the sole of the foot from a little in front of the tuberosity of the scaphoid to a point just behind the tuberosity of the fifth metatarsal bone. From the ends of this incision others are made to the two malleoli, and their ends connected by a horizontal incision on the posterior surface of the leg. All these incisions are quite to the bone. The foot is then disarticulated at the ankle-joint from behind, the astragalus and calcaneus freed from the soft parts on their dorsal surfaces, and removed by disarticulation at Chopart's joint. The malleoli and the posterior surfaces of the scaphoid and cuboid bones are then squarely sawed off, and the foot flexed until the sawed surfaces are opposed. Thus the foot is brought into a perfect equine position, the toes pointing in the same direction as the axis of the leg. In the present case the wound united by first intention, and when bony union was sufficiently good the patient was taught to walk, the toes bending at right angles to the metatarsals. Before the operation the

patient had not walked for four years, and now, six months after the operation, he can walk without a cane, and works daily in the forests as a wood-chopper.—*Boston Med. and Surg. Jour.*, May 26, 1881.

A NEW SIGN OF SCROFULA.

M. CONSTANTIN PAUL (*Union Méd.*) draws attention to a new sign of this cachexia—viz., the appearance of the lobes of the ears after piercing for earrings. In many scrofulous individuals, instead of the usual simple canal, there will be found either a widened channel with thick cushiony borders, or a section of the lobe causing a slit through to the edge, or ugly cicatrices upon the lobe. He regards the presence of these lesions as important in the examination of wet-nurses, and refuses to employ any nurse who has them, on the ground of scrofulous taint. Further, he advises against piercing the ears of girls having evidence of scrofula, for fear of producing these deformities. These lesions may be the first evidence of the strumous diathesis. In support of his theory he reports one hundred and twenty cases, in one hundred and sixteen of which other symptoms of scrofula were present. The morbid process is a species of lupus, a peculiarity of which is that the ulceration is always downward to the rim of the lobe, due probably to the weight of the ear-ring. Proofs of the constitutional origin of the ulceration are shown by its slow course and by the fact that in seventy-nine per cent. of the cases it was bilateral.—*N. Y. Med. Jour.*, June, 1881.

DIAGNOSIS OF PULMONARY CANCER.

M. G. SÉE (*Union Méd.*) gives the following points for the diagnosis of cancer of the lung:—1. A very great amount of dyspnœa, which is permanent. 2. Expectoration of the character of bloody pea-soup. 3. A great amount of pain. 4. Physical signs: (*a*) dulness, which has no point of election, develops over the new growth, grows with it, and occupies but one side of the thorax; (*b*) the vesicular murmur is absent; (*c*) vocal fremitus is wanting; (*d*) there is a slight displacement of the neighbouring organs. If the cancer is what he calls “compressive,” we may have slight œdema, dysphagia, and a difference between the radial pulses, if it should press on the subclavian artery. From phthisis it is diagnosticated by the seat of the lesion and by the character of the expectoration; from chronic pneumonia, by the dyspnœa being greater, by the character of the sputa, by the dulness being limited, and by the absence of *souffle* and fremitus; from pleurisy, by the character of the sputa and by the absence of *souffle* and fremitus. The compressive form of cancer is diagnosticated from bronchial adenopathy by the phenomena to which it gives rise not being so intense as in the latter; from aneurism of the aorta, principally by the absence of aortic *bruit* and pulsation.—*N. Y. Med. Jour.*, June, 1881.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1881.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*On Pulsating Liver.* By DAVID DRUMMOND, M.A., M.D., Univ. Dubl.; Physician and Pathologist to the Newcastle-on-Tyne Infirmary; Physician to the Children's Hospital; Lecturer on Physiology, University of Durham College of Medicine, Newcastle-on-Tyne.

PULSATING liver, although of frequent occurrence as a clinical phenomenon, is often overlooked by the physician. Few of the text-books in common use make mention of it, and fewer still accord to it the prominence it merits as a physical sign. By pulsating liver I do not mean the ordinary epigastric pulsation, which is so commonly due to the dilated and hypertrophied right ventricle, communicating either directly or by the medium of the left lobe of the liver an impulse to the abdominal wall below the sternum, or else due to throbbing aorta. But I refer to a much more important phenomenon—important, because clinical observers are very generally agreed upon its diagnostic significance, whereas concerning the ordinary epigastric pulsation there exists much difference of opinion, and nearly all agree that it may be physiologically present in everyone—important as well, inasmuch as by its recognition a very grave cardiac change may early be diagnosed, especially when taken into account along with other correlated but less certain signs. The phenomenon I would call attention to is gross, and easily recognised. When it is present, the whole of the hepatic area will be found to pulsate, the ribs below the right

nipple rising and falling rhythmically, whilst the liver itself, which is very generally enlarged, may be seen and felt to pulsate below the ribs. This heaving, but rhythmical, pulsation may occasionally be observed to affect the ribs as far back as the scapular line, whilst in the right axillary line it is often very marked.

We are told by Balfour^a that "hepatic pulsation may, however, be caused in a threefold manner—firstly, we may have simply a systolic depression of the liver, chiefly the left lobe, synchronous with the contraction of the ventricles, and apt to be regarded as the pulsation of the heart itself; secondly, we may have a heaving of the whole mass of the liver, due to a movement communicated to it by the vena cava, which is often enormously dilated . . . and thirdly, we may have a distinctly expansile pulsatory movement also communicated to the whole mass of the liver by the systolic pulsation of the hepatic veins ramifying within it."

After this brief allusion to the existence of the phenomenon, I purpose to discuss in this communication, firstly, the cause of the phenomenon, and secondly, its significance as a sign of diagnostic import.

I have had the opportunity of examining thoroughly nine cases of pulsating liver, or rather nine cardiac cases in which this sign was present. Into the details of these cases I shall not enter further than will suffice to illustrate and enforce the views advanced when attempting to carry out the dual task I have set myself. I have eliminated from the group all cases in which the hepatic impulse was in any sense localised—*e.g.*, confined to the left lobe. The pulsations from which I would draw my inferences were, in every case, forcible and general; it follows then, as a corollary, that the agency at work in producing the phenomenon must be cogent and well directed. Such being the case, I apprehend that direct impulse from the descending cava could only in the most exceptional case cause the up-heaving of the liver. For such an one we are obliged to go to Senac's record, quoted by Burns, in which the cava was dilated to the size of a man's arm. It is the constant observation of clinical physicians that the venous pulsation in the jugular vessels, in cases of tricuspid regurgitation, is rather a visible than a palpable pulsation: in other words, the distensive force in the veins is but a feeble one, and therefore—to draw an inference from the jugulars—scarcely calculated to raise with each beat an organ like the liver. Walshe

^a Clinical Lectures on Diseases of the Heart and Aorta. P. 179.

writes :^a—" In the former case (tricuspid regurgitation) distension and pulsation of the auricle, vena cava, innominate and jugular veins, is habitually present—that of the latter *visible*, but not *palpable*." Whilst objecting to the theory of *direct vena-caval impact* as a cause of hepatic pulsation, I do not deny that in some cases the pulsation in the cava may be very marked. Seidel, Geigel, and others have communicated cases of tricuspid disease (regurgitation) in which pulsation was observed in the inferior vena cava.

The question then arises—Is this hepatic pulsation caused by *back-wash* (to use a convenient expression)? by which I mean a wave originating in the right ventricle, and passing through the right auricle into the descending cava and hepatic veins, causing sudden distension of these veins already overfull, even to their minute ramifications—sublobular veins—and thus causing a sudden general expansion of the liver, and hence a pulsation. In this way the impulse in the liver would be somewhat analogous to the pulsation in the thyroid gland in a case of exophthalmic goître, or to the throbbing in the brain of an infant, as seen in the anterior fontanelle; with this notable difference—viz., in the case of the liver the expanding force is a *stemming-wave* acting against the stream and towards increasing pressure, whilst in the goître or brain the wave is in the direction of the current, and diminishing pressure. Again, in the former case the vessels are almost inelastic, whilst in the latter they are highly so. However, to this point I shall return. Or else—Is the hepatic pulsation the result of an impulse received direct from the superimposed heart? Before proceeding further, let me describe the phenomenon of hepatic pulsation as it occurred in a most striking manner in the case of a youth, aged seventeen, who came under observation suffering from stenosis and incompetency of both the mitral and the tricuspid orifices, and then it will be more profitable to discuss the cause, having a special case before us.

CASE I.—Wm. S., a sailor, was admitted into hospital for dyspnœa, palpitation, and cough. He stated that he had been out of health for about eight months, and ascribed his illness to cold caught during a voyage out to Bombay. This attack left him unable to ascend the rigging, or otherwise to take his full share of duty. He had observed palpitation and swelling in the epigastrium for four months before admission. One attack of hæmoptysis had occurred, and that shortly

^a Diseases of the Heart. Third Edition. P. 101.

before he came to hospital. He had never suffered from rheumatism. When admitted I was much struck with his appearance, the skin presented a peculiar blending of cyanosis and jaundice, which gave him quite the colour of a Chinaman. He lay propped up in bed, evidently much distressed in his breathing. When the chest and abdomen were exposed the violent pulsation of the *præcordia* at once invited attention to the heart. The apex beat, or rather the extreme left and inferior limit of this pulsating area, was $2\frac{1}{4}$ inches below and an inch to the outside of the left nipple. The area of cardiac dulness was much increased, and extended on a level with the nipples, an inch to the right of the sternum. The wall of the chest corresponding to the heart bulged considerably. The stethoscope revealed a most interesting series of endocardial murmurs—viz., left apical systolic and presystolic, and tricuspid double murmur, of like rhythm, but different pitch and intensity, the systolic of which was heard distinctly at the right nipple, whilst the presystolic tricuspid was lost half way between the right parasternal line and the right nipple. The liver was very much enlarged, and could easily be *palpated*; it reached down to the umbilicus in the middle line, and in the right parasternal $3\frac{1}{2}$ inches below the ribs, the upper limit commencing at the nipple. It was doughy, and *pulsated* forcibly. The entire organ appeared to pulsate; the portion of the liver incased within the ribs caused the latter to heave rhythmically. No alteration in the position of the patient produced any effect upon the pulsation—i.e., when lying on his left side, the 5th, 6th, 7th, 8th and 9th ribs in the right axillary line expanded and receded as before, like an aneurism. The pulsation was, as felt in the doughy mass which the liver presented in the abdomen below the ribs, distinctly twofold in character—i.e., made up of a *shock* and an *expansile* movement combined, resembling the sensation conveyed to the finger when placed upon the suddenly inflated cheek. The pulsation began synchronously with the apex beat, but appeared to survive it—that is, as far as it was possible to make the observation, the expansile element in the impulse seemed to begin as the apex beat finished.

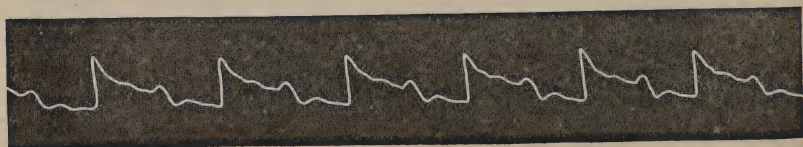


Fig. 1.

A fortnight afterwards, the above observations having been frequently repeated in the interval, it was noted that the hepatic pulsation was reduplicated, two distinct pulsations were evident, the first forcible, followed by a short interval, and then the second less forcible, but obvious.

Corresponding to these hepatic pulsations were two ventricular beats in each cardiac cycle, and a reduplicated radial pulse which is well shown in the accompanying graphic representation (Fig. 1). The murmurs were now necessarily very complicated, but into their features it is not needful to enter further than to state that in the mitral area two well-marked systolic bruits were audible, cut into, as it were, by the divided pre-systolic murmur. The diagram (Fig. 2) represents the murmurs at the apex audible during one cardiac cycle. Over the lower end of the sternum (tricuspid area) murmurs very similar to those heard in the mitral area were made out; however, the first tricuspid systolic bruit was alone conducted as far as the right nipple. The jugular veins now for the first time were observed to pulsate, previously they were full, but without distinct pulsation. This venous pulse was reduplicated, corresponding to the hepatic and arterial pulse and cardiac beats. The patient became gradually worse, and died a fortnight after the condition just described was first noticed. A week before death the heart lost the dual-beat character, and the liver once more pulsated as it did when the case first came under observation.

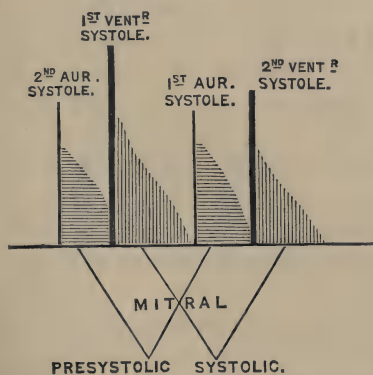


Fig. 2.

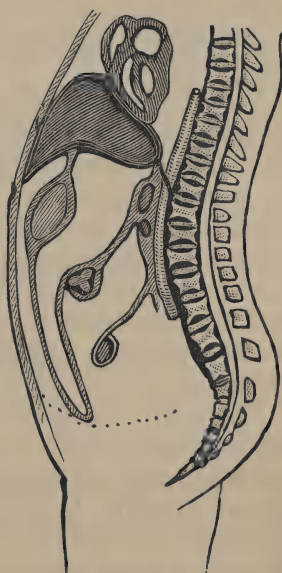


Fig. 3.

Post Mortem.—The heart was found to be much enlarged (16 oz.), and was almost buried in the upper surface of the liver. The accompanying diagram of the body in section (Fig. 3) represents very well the relative position of the heart to the liver; so that the right side of the heart was

applied immediately to the liver, which was much increased in size and nutmeggy. The right cavities of the heart were dilated and hypertrophied. The left ventricle presented tolerably thick walls, but the cavity appeared somewhat reduced in size. The mitral curtains were almost glued together, leaving a space which just admitted the tip of the forefinger, as the left auriculo-ventricular opening. The tricuspid orifice was also considerably reduced in size, and just admitted the tips of two fingers, the valves were thickened, and were evidently markedly incompetent.

In this well-marked case of tricuspid regurgitation the hepatic pulsation was, I think, caused in a twofold manner:—Firstly, the liver was suddenly depressed by the impact of the heart; the right ventricle, closely adapted as it was to the surface of the liver, could scarcely fail to communicate to that organ a vibration or movement at each systole. Secondly, immediately following the shock which the liver received was an expansile movement which, though it followed the apex beat, the shock being simultaneous with it, was incorporated with the shock into one impulse or pulsation. This expansile movement was the result of *back-wash*.

Whilst necessarily regarding the case thus briefly related as an exceptional one, particularly with reference to the contiguous position of the heart to the liver, yet, it must not be overlooked that in tricuspid regurgitation the heart as a rule is more closely adapted to the liver than in health, in consequence on the one hand of the hypertrophy of the right cavities, and on the other of the increase in the bulk of the liver. However, the case illustrates well the point I wish to emphasise—viz., *that the direct impact from the heart generally plays some part in the production of the hepatic pulsation*.

This shock, as compared with the regurgitation into the descending cava and hepatic veins, is *insignificant as a cause of hepatic pulsation*, and will generally be found, when acting alone, to influence the liver in a local fashion, but, when exerted in conjunction with *back-wash*, it aids in the production of the phenomenon. That it is really *regurgitation*, and not *shock*, which is the chief factor at work is evident from the fact that as the condition of the patient improves the hepatic pulsation becomes less and less until the impulse is confined almost entirely to the left lobe, the main mass of the organ remaining at rest.

The following case I adduce to exemplify this point:—

CASE II.—James M'S., aged twenty-six, a chemical labourer, suffered from rheumatic fever ten years previously. He enjoyed comparatively good health until six months before admission into hospital, when, as the result of a severe strain, he first complained of his heart—palpitation, dyspnœa, and cough. The following is a very brief account of his condition when admitted:—The skin and conjunctivæ slightly jaundiced; lips cyanosed; lower extremities œdematous. His heart was hypertrophied, and pulsated over an extended area. At the apex ($2\frac{1}{2}$ inches below and $\frac{1}{2}$ inch to the outside of left nipple) a well-marked, harsh presystolic murmur was audible, corresponding to which a thrill could be felt, with a soft blowing systolic bruit. As the sternum was approached with the stethoscope, the systolic murmur almost disappeared, and then became more intense, so that over the lower end of the sternum was heard a loud systolic tricuspid murmur. The liver was much enlarged, and *pulsated forcibly*; it extended three inches below the ribs in the right parasternal line. The pulsation was of the same character as that which was observed at first in the case of Wm. S., already related. The jugulars were prominent, but presented very slight pulsation.

This patient was put upon digitalis, and improved very rapidly. In a few days the pulse became slower, but steadier and more forcible. At the same time the hepatic pulsation almost disappeared, whilst the liver became smaller. The tricuspid and mitral murmurs remained as before. During this period of improvement the patient was kept in bed, but tiring of his confinement he got up and went about; in consequence he caught cold, and became markedly worse. It was then observed that, becoming more cyanotic and œdematous, the liver once more enlarged, and began to pulsate, whilst the heart became more irregular.

We have not far to look for the interpretation of the phenomenon of disappearance of hepatic pulsation *pari passu* with the general improvement. As the condition of the patient becomes ameliorated, the arterial pressure rises gradually, whilst the venous tension falls, so that from a full, over-distended vena cava, which vessel is not infrequently dilated in tricuspid disease, we get a vessel only moderately full, and at comparatively low pressure; the result is that each wave passing as a *back-wash* from the right ventricle through the auricle into the cava, expends its force in expanding the walls of, and raising the pressure in, that vessel, the residuum being almost inert, fails to distend the hepatic vessels. Let us look for a moment at the other side of the picture. The patient is going rapidly down the hill; the blood flowing in the veins at high pressure receives and transmits with readiness the backward

wave from the right ventricle, for the vessel which contains it is already overfull, and hence the brunt of the new distending force is borne by the hepatic veins and smaller radicles. Moreover, the distended condition of the right cavities must merely conduce to a greater regurgitation, if there be any truth in King's "Safety-Valve Function of the Heart." Thus it appears that the disappearance of the hepatic pulse, as the condition of the heart and circulation improves, is a strong argument in favour of the *back-wash* theory. And if any additional evidence were required, it may be found in the fact that, along with the increasing force in the ventricular systole, as a result of *rest, increased heart nutrition, and stimulated inhibitory apparatus* (*digitalis*), the liver pulse becomes less noticeable. For, if the pulsation had been due altogether to direct shock, such a condition of heart must have increased it materially. Again, the character of the pulsation is in favour of the former view. It can be made out to be distinctly *expansile*, and though it often begins simultaneously with the apex beat, yet it also survives it; thus it is in action after the ventricles have ceased to contract. Taylor, whose article "On Pulsation of the Liver"^a is well worth a perusal, lays great stress upon the expansile sensation communicated to the fingers when placed upon the liver, as a proof that the phenomenon is due to regurgitation through the tricuspid orifice into the hepatic veins. He met with five cases of cardiac disease in which hepatic pulsation was present. Friedreich is also in favour of this theory as an explanation of the phenomenon.

[To be continued.]

ART. IX.—*The Pathology and Treatment of Acute Rheumatism.*^b

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I THINK it will be generally admitted that the subject of acute rheumatism, as far as its pathology, ætiology, and treatment are concerned, is still in a very unsettled condition, and that the position assigned to it in the nomenclature of disease is unstable and unsatisfactory. Our early nosologists, Sauvage and Vogel, gave it a place among the class *Dolores*; Mason Good in the class

^a On Pulsation of the Liver. Guy's Hospital Reports. Third Series. Vol. XX. 1875. P. 377.

^b Read before the Ulster Medical Society, Session 1880-81.

Hæmatica, order Phlogotica; Cullen among the Pyrexiaë, order Phlegmasiaë; Dr. Farr some forty years ago believing that acute rheumatism was due to a *materies morbi* introduced into the body, which, after an indefinite period, leavened the whole mass of the circulating fluid, included it in the list of zymotic diseases in the same category as scarlatina, cholera, and erysipelas; later on the College of Physicians classed it with the constitutional diseases, along with Scrofula and Purpura. Among our writers on systematic medicine, Sir Thomas Watson says that "rheumatism is a blood disease, that the circulating fluid carries with it a poisonous material, which, by virtue of some mutual or elective affinity, falls upon the fibrous tissues in particular, visiting and quitting them with a variableness that resembles caprice, but is ruled no doubt by definite laws to us as yet unknown;" while Ziemssen, taking into account no pathological relations or affinities whatever, simply from a regional point of view, established a class for itself, grouping with it gout, arthritis, rickets, and mollities ossium, under the heading of "Diseases of the Locomotive Organs."

The importance of a correct nosological and pathological definition of acute rheumatism cannot, in my mind, be overrated, as it is to a great extent on those bases that its ultimate cure must depend. Senator says "its treatment has varied with our theories concerning its pathology, since rational therapeutics (really or apparently in harmony with accepted views on pathology) were substituted for traditional empiricism."^a Further on Senator says in forcible language "that no remedy has up to the present time established its claim to universal favour—none has been discovered to possess undoubtedly specific virtues, to be capable of summarily arresting the disease under all circumstances."

The statement of Fuller is as applicable to-day as when announced a quarter of a century ago—viz., "that each and every plan of treatment which has been hitherto proposed is regarded by the profession as unsatisfactory." And according to Garrod, "further observation and experiment are required before we can arrive at any satisfactory conclusion with regard to its pathology."^b

Should the existence of this regrettable state of affairs be questioned, one has only to think of the heterogeneous list of remedies so opposite in their nature recommended for the cure of this painful disorder—acids and alkalies; mercury and mint water;

^a Ziemssen. Vol. XVI., p. 59.

^b Reynolds. Vol. II., p. 904.



venesection and quinine; hot blankets and the cold bath; the hypodermic injection of morphia into the joints and the blistering plan of Davies; subcutaneous injections of cold water and of carbolic acid; cotton wool and icebags to the swollen joints and spine; opium and atropia; tartar emetic and colchicum; aconite and veratrum viride; and, finally, the most fashionable and most disappointing of all—salicin, salicylic acid, and its compounds.

What is most strange is the fact that each of these remedies has for its sponsors most learned and able authorities who can point to apparent cures of this disease, although without being privileged to claim any great numerical advantage over others. We wonder indeed at the toleration of such diverse and heroic remedies, and are reminded of the observations of Dr. Clutterbuck, who said that, "though ligamentous inflammation does not yield so readily as some other inflammations, it bears almost all kinds of treatment with impunity, and at last often subsides spontaneously, the disease seeming to wear itself out."

Salicin and its compounds deserve more than a passing notice. After being experimented with in Germany, it was introduced to the profession in this country by Dr. MacLagan, of Dundee, who assured us that "it seems to arrest the course of the malady as effectually as quinine cures an ague or ipecacuanha a dysentery; that given sufficiently early and in sufficient doses it prevents cardiac complications, and that its free administration is the best means of staying their progress after they have occurred." Now, were these promises fulfilled in practice, we might rest on our oars, having been thus provided with the true specific for this intractable disorder. But what does experience testify? Five years have now elapsed (March, 1876) since its advent was so loudly heralded, and what are the fruits? It is certainly entitled to the character of a most potent antipyretic, and, inasmuch, is capable of controlling one of the many distressing symptoms of rheumatic fever, but at what cost to the patient? In my own experience it has proved most deceptive and dangerous. Of salicylic acid and its salts, Senator says that in a considerable proportion of cases "they give rise to vertigo, headache, tinnitus aurium, and deafness, nausea, and vomiting after every dose; profuse sweating, great weakness, with a peculiar eruption on the skin; more rarely the symptoms assume a dangerous complexion, violent delirium, albuminuria, great prostration, with pallid skin and feeble pulse, ushering in fatal collapse, and these results have

been observed after the administration of perfectly pure samples of the drug. He thinks highly of salicin, being fundamentally the same as salicylic acid, and that it does not give rise to any of the disagreeable or dangerous accidents common after the salicylic acid and the salicylates." So far Senator. However, in *The British Medical Journal*, February 12th, 1881, Dr. Charteris, of Glasgow University, gives the result of his experience of 80 cases in which salicin was prescribed. He says—"In uncomplicated cardiac cases it will lower the temperature in forty-eight hours; if the temperature be not lowered in that time, in all probability the heart is affected, and in that case the medicine should be countermanded, for then it will in no way diminish the fever." And Dr. Curnow, Assistant Physician to King's College Hospital, in *The Lancet* of Nov. 18, 1876, gives the particulars of a case in which, after having given the salicin in large doses, so much as 800 grains in five days, prior to the appearance of the friction sound, the result was the absence of any relief whatever, the supervention of a very acute pericarditis, the powerlessness of this remedy against the complication and the attendant fever, the appearance of the friction sound, a tedious recovery and prolonged convalescence."

Moreover, in two very elaborate papers communicated to the Clinical Society of London by its President, and published in *The British Medical Journal*, 9th May, 1880, Dr. Headlam Greenhow states that in 10 cases of acute rheumatism in which he gave salicin alone, and in 50 cases in which salicylate of soda was administered, similar unhappy and perilous results were developed during their use, often requiring stimulants to restore the heart's action. His conclusion is "that these agents could not be regarded as in any respect specifics in the treatment of rheumatic fever. In all the most acute cases the relief derived from the medicine passed away soon after it was intermitted, and a relapse, sometimes several relapses, took place. Excluding mild cases and deaths, out of 32 remaining there were twenty-one relapses; in 7 one; in 9 two relapses; in 2 three relapses; in 2 four relapses; in 1 five relapses." Dr. Headlam Greenhow says, in conclusion, "that the complications were not less frequent, the condition of the patient was worse after recovery, and the length of time the patient was disabled was longer than under other modes of treatment. Of those 37 cases they were on an average fifty-seven days in hospital" (forty-two being, as we all know, the normal period, even under

the Nihilistic treatment). No stronger condemnation could possibly be pronounced against any vaunted remedy. He concludes that "the pain and distress of the patients were undoubtedly for a time greatly relieved; he feared that the marked weakening of the first sound of the heart present in many when salicylic acid was given indicated the exertion of an influence on the muscular structure which might not pass entirely away when the treatment was suspended. Its prolonged use was likely to prove injurious when the heart was affected."

That salicin and its compounds act as powerful depressants of the heart's action no one will likely question after the above statements. Salicin never acts therapeutically until its physiological or rather its toxic influence is first induced. Indeed, if we examine closely into the *modus operandi* of this and the other remedies previously referred to, we shall find that the measure of their beneficial agency in the relief of individual symptoms of acute rheumatism is exactly the extent to which they operate directly or through the medium of the nervous system on the heart itself, thus arriving by different routes at the same goal, just as in olden times all roads were said to lead to Rome.

As my object, however, is purely practical, and not merely to dilate upon the insufficiency of accepted remedies, I shall proceed to relate a number of recent cases, as observed by myself and some of my professional brethren, in which by a simple remedy, and practically without the administration of any medicine, the cure effected in almost every case was at once rapid, simple, and complete.

CASE I.—*Acute Rheumatism*.—On 24th October, 1879, I visited Sub-constable H., R.I.C., aged thirty, married. He had a rigor three days previously, followed by pains, especially in the left knee and thigh, which were red and swollen.

25th.—Pains had extended to right knee, to both ankles and shoulders.

26th.—Left elbow also engaged; perspiration acid and profuse; urine scanty and loaded with urates.

27th.—State unchanged. Ordered an opiate at bedtime. He had been laid between blankets and his joints wrapped up in flannel and cotton wool.

28th.—Had not slept for a week; at 1 p.m. his temperature was 102°, pulse 108; no improvement; no cardiac affection observable; at that hour I applied a blister 4 × 3 inches over the region of the heart, ordering its removal in eight hours, and to be replaced by cotton wool.

29th (noon).—Found the patient completely relieved; countenance cheerful; pulse 90, temperature 98° ; tongue clean; thirst diminished; perspiration gone; urine copious and clear, and from being on the previous day paralysed in every joint and quite helpless, he was able without pain to flex and extend every joint, and to sit up in bed with ease. He stated that he began to feel relief at 6 p.m. on the previous day, five hours after the application of the blister; that soon after he fell asleep for the first time for many days, and that having occasion to rise during the night he walked unaided across the room, and only remembered his rheumatism after returning to bed. On examining the joints every trace of redness had gone, and the swelling was scarcely perceptible; the joints could be grasped firmly without pain. He then stood up and walked across the floor without any undue effort.

29th and 30th.—Still improving; pulse 90, temperature 98° ; swelling and pain absolutely gone from every joint; heart free.

Nov. 1.—Pulse 84, temperature normal; convalescence complete, and my visits ceased. A week after he walked to my residence on a frosty day without any injury, and he soon after returned to duty.

CASE II.—*Subacute Rheumatism*.—On 16th December, 1879, I visited Mrs. B.; she had been confined fourteen days previously; child at nurse; had a shivering on 11th; next day both hands and the left shoulder became painful and swollen; pain increased at night; sleepless for five preceding nights. On examination I found both hands swollen and powerless; all the carpal, metacarpal, and carpo-phalangeal joints were implicated; perspiration profuse; urine scanty and high-coloured. This was her third attack, having been ill for thirteen and sixteen weeks in first and second attack. In this case I did not prescribe a particle of medicine, but applied a blister over the cardiac region. Calling next day, I found the patient sitting up in bed. Despite the pain of the blister she had slept all night. The perspiration had left, *pari passu*, with the pain. The right hand had already regained its power, the fingers were quite free, and in three days after the left hand, which had been most swollen, was quite relieved. I paid her but two other visits, and on the last of which I was gratified to find her down stairs, nursing her baby and perfectly able to take charge of it. My friend, Dr. William Aicken, saw this patient once with me.

CASE III.—*Acute Rheumatism*.—J. F. R., aged fourteen, tall and stout, had a rigor on 6th April, 1880, followed by pains in right and left knee and ankles. I visited him on 9th; found him lying on his back, unable to move from the swollen condition of his joints, his elbows especially. Pulse 88, temperature 101° ; urine clear but scanty; perspiration plentiful.

10th.—Condition unchanged.

11th.—Still sleepless, although he had an opiate on previous night; urine now highly acid, with copious deposit; heart pulsating violently, with distinct systolic apex murmur. Dr. Whitla, who examined the patient this day, coincided in the diagnosis. In his presence I applied a blister, *regioni cordis*, to be retained for eight hours.

12th.—Found the patient sitting up and relieved; he had slept soundly all night after the removal of the blister, and had got up unaided to the night chair; urine again clear; pain and swelling reduced in all the joints, which he could flex without trouble. Pulse and temperature unchanged.

13th.—Still progressing; slept well; urine clear; sweating gone; found him again sitting up and anxious for removal into next room. Pulse 68, temperature 99°.

14th.—Temperature 98°, pulse 60.

16th.—Temperature normal, pulse 56; all traces of swelling gone, and convalescence complete; he had taken in all 10 grains of opium. Dr. Whitla watched the progress of this case with me. The pulse and temperature in this case fell so low that I had to order stimulants. Fourteen days after all trace of cardiac symptoms had departed.

CASE IV.—*Subacute Rheumatism*.—Miss L. V., aged ten years, had a rigor on 17th April, 1880, followed by great muscular pains and general malaise, succeeded by urticaria; both ankles then became painful, red, and swollen, and also the right knee. I saw her upon the 19th; she was then in bed, and unable to move from the severity of the pains; pulse 88, temperature 101°; urine scanty, clear, of acid reaction; bowels confined; perspiration very free; increased palpitation of heart and well-marked apex systolic murmur. Ordered a laxative.

19th.—Fever and thirst increased; had not slept. I applied a small blister over the region of the heart for four hours. The joints had been previously enveloped in cotton wool.

20th.—Pain and swelling of joints much less; had slept well; perspiration diminished; urine muddy with pink deposit; tongue clean; soft murmur over apex. Pulse 86, temperature 100°.

21st.—Pains all gone; pulse 84, temperature 99°; slept well; appetite restored.

22nd.—Slight recrudescence of pain in right knee, which is stiff.

23rd.—Pain and swelling gone from knee; pulse 80, temperature normal; blister almost healed; much stronger.

24th.—Convalescent; to be removed to another room. The cardiac symptoms did not quite subside for a period of fourteen days.

CASE V.—*Acute Rheumatism*.—I visited A. S., aged thirteen, on 6th November, 1880, and found her suffering from pains in every joint,

this being her third attack of acute rheumatism. She was an inmate of an industrial school, and attributed her illness to a long walk on 1st Nov., a very frosty day. She was removed to a newly-plastered infirmary, on account of overcrowding, where I found her along with L. G., the subject of the next case. Pulse 112, temperature 103°; her heart beating tumultuously, with systolic murmur at apex; 15 minims of tr. opii were given at bedtime.

7th.—Next day no improvement.

8th.—Before proceeding to treatment I requested my friend, Dr. Esler, to accompany me. Pulse was then 120, temperature 103°; face flushed, and she was crying loudly for something to cool her. I then applied a blister over the heart for six hours, to be dressed as usual with cotton wool.

9th.—Visited with Dr. Esler; our report was—pulse 118, temperature 102°; painful symptoms much abated; bruit softer; ankles free; shoulder better; can flex knee freely; she walked across the room and returned without difficulty; to-day friction to-and-fro sound first appeared; applied a blister over the sternum.

10th.—Pulse 96, temperature 99°; pain absent everywhere except on left hip; urine clear; slept well.

11th.—Pain of hip gone; pulse 100, temperature 102°; pericardiac trouble subsiding, as well as apex murmur.

12th.—Dr. Whitla joined Esler and myself; his report was—"No affection of any joint whatever, nor is there pain or tenderness anywhere except over the cardiac region; pulse 90, temperature 101·5°; a loud friction murmur over the entire area, masking a feeble endocardial murmur near to the left nipple."

13th.—Pulse 86, temperature 99·5°; cardiac sounds still loud; no further articular troubles; further signs of effusion, with prominence of left side.

14th.—Area of dulness less; temperature 98°, pulse 72; friction sound less; bruit still perceptible; crepitation at base of lung and left axillary region. A mustard poultice to be applied.

15th.—Pulse 60, temperature 96°; countenance pale; extremities cold. To have 2 oz. wine in the day and hot water bottles to feet.

16th.—Pulse 72, temperature 97°. 4 oz. wine.

17th.—Found her sitting up at lunch in bed.

18th.—Improved in every respect and proceeding to convalescence, when an inexperienced nurse stripped her at the fireside, exposed her to the cold air of the room, and splashed her over with tepid water, when she immediately took a shivering, and all the cardiac symptoms returned with violence. A fresh blister, however, and a week's rest in bed served to restore her health, and before the end of the month of November she was quite well and free of all cardiac and articular trouble.

CASE VI.—*Acute Rheumatism*.—L. G., aged fourteen; first attack; resembled case No. V. so much that it need not be pursued from day to day. She was exposed to the same chill while walking on 1st November, lay down about the same time, had the same cardiac ailments, and about the same time recovered her strength. She was then maltreated in the same way by exposure and bathing in the newly-plastered room, took a rigor again, was again attacked by the cardiac affection, but was not so fortunate as S., for after getting over all acute symptoms there still remains a persistent murmur at the apex of the heart. My friends, Drs. Esler and Whitla, saw this child along with S., she being in the next bed and same room. She was up and going about on 4th December.

CASE VII.—*Subacute Rheumatism*.—On Nov. 25, 1880, I was called to a religieuse, Sister M., in her convent. She was anæmic and of hysterical and nervous temperament. She had sore throat, insomnia, general muscular pains, and profuse perspiration. I prescribed for those symptoms, but on 1st December they became more pronounced; pain and swelling of the joints of the upper and lower extremity and acute pain in the præcordial region, increased by respiration, now appeared.

2nd and 3rd Dec.—Was much worse; in addition severe headache, flushed eyes and countenance ensued, and sleeplessness continued. Pulse 98, temperature 100°. I then applied a blister over the heart for six hours.

4th.—Found the patient cheerful and smiling, with clear eyes, face pale as in health, headache quite gone, perspiration had ceased, and all the joints were free from pain and swelling and capable of motion; she could turn in bed without assistance, and had slept soundly; pulse 72, temperature normal; kidney secretion plentiful and clear.

5th.—Improvement proceeding; appetite restored; she rose in three days after, and on 10th December removed into another room, and my visits ceased.

CASE VIII.—*Subacute Rheumatism*.—Sister M. A., in the same convent, while out on visitation on 6th March, 1881, felt fatigued; had a shivering next day, followed by sore throat, general fever, and muscular pains. On 11th her left knee became red, swollen, and painful; then the right knee and elbow, then right ankle and both wrists became engaged. At this time the heart's action became irregular, with frequent intermissions, and an acute pain was complained of in the interspace between the fifth and sixth ribs, left side. Perspiration very free.

19th and 20th.—Symptoms more pronounced, and on 21st I applied a blister at 3 p.m. over the heart, the temperature being 100° and pulse 84. Next day she declared herself quite well; had found relief at 3 a.m., twelve hours after the application of the blister; she could now

flex and extend all her joints freely; swelling and pain almost gone; perspiration much less; kidneys acting freely. Pulse 72, temperature normal.

24th.—Improvement continued; sleep and appetite had returned; was able to rise, and complained of nothing except five or six spots of erythema nodosum, the size of a penny, that had appeared on her limbs; they were very troublesome, but yielded at last to free doses of fluid magnesia.

The next five cases are kindly contributed by my friend, Dr. J. Walton Brown, Royal Hospital, Belfast.

CASE IX.—*Subacute Rheumatism*.—Miss C. B., aged twenty-four, ill since 10th February, 1880, was seen by me on 16th; she took ill with a sore throat and general pains, especially in her knee-joints; she perspired freely on 12th and felt better; her hands and wrists now became swollen and painful, so as to prevent sleep; the pains continued in all the joints, and she became quite helpless. When I visited her both hands and wrists were much swollen, and she could not bear the slightest pressure; had pain in the præcordial region, with slight mitral murmur; pulse 120, temperature 103° ; evidently suffering from acute rheumatism. I prescribed no medicine, but following out the treatment suggested to me by my friend, Dr. Harkin, I applied an emplastrum lyttæ, 3×3 inches, over the heart for twelve hours. On my next visit sixteen hours after the application of the blister, I found all pain gone from the hands except when she moved them, and from the other joints; all swelling had entirely subsided; the pulse had fallen to 88 and temperature to 99° . Next day I put her upon a mixture of potass. bicarb. and tr. opii. She was then able to leave her room, and upon 26th February she left for the country. Certainly the effect of the blister in this case was marvellous, the pains ceasing, pulse and temperature coming down, and all swelling subsiding in sixteen hours after the application of the blister.

CASE X.—*Subacute Rheumatism*.—Miss A., from the West of Ireland, was seen on 14th February, 1881. She complained of weak vision and general debility, and was very anæmic. I did not visit her again till 19th March, when I found her labouring under an attack of subacute rheumatism. The pulse numbered 90 and temperature 99.4° . The wrists, knee, and ankle-joints were very tender to the touch. Ordered a blister, 2×2 inches, to be applied for twelve hours over the cardiac region and cotton wool around the joints; milk diet. Called two days afterwards, and was surprised to find my patient sitting up and all pains gone. She felt very weak, but under treatment was quite well upon 1st April.

CASE XI.—*Subacute Rheumatism*.—Miss M. S., aged four years, was seen by me upon 6th March, 1881. She was suffering from an inflamed throat, with glandular enlargement in the neck. I prescribed the routine treatment, and did not see her again till 11th March. When I visited her I found her ill with acute rheumatism; the wrist and knee-joints were swollen and tender; pulse 120; skin perspiring; she had not slept on previous night on account of the excessive pain. The temperature was not taken. Applied a blister, 2×2 inches, over the cardiac region, to remain for ten hours; cotton wool to the joints affected. No abnormal cardiac sound could be heard. Next day (12th March) all pain gone from the wrist and knee-joints. The child had slept some hours after the blister was taken off; the pulse was down, the expression of the face calm, and the patient seemed quite easy. On 13th I ordered her an alkaline mixture. On 14th she was out of bed, and in a few days was running about.

CASE XII.—Master M. S., aged five years, brother to previous patient, was visited by me on 26th March, 1881. He was suffering from swelling of wrist and knee-joints; pulse 120; thirst excessive; throat congested, and had not slept for two days. His mother knowing the value of the blister in the former case had thought of applying one, but before doing so consulted me. I ordered a blister, 3×3 inches, to be applied for twelve hours over the cardiac region and cotton wool over the inflamed joints.

27th March.—Patient was seen by Dr. Harkin along with me; all tenderness of the joints gone, but some puffing still remained over the wrist-joints; pulse 120. The little patient complained of headache, and the pupils were dilated; he had also on the anterior surface of his abdomen and legs a number of spots very much resembling those of purpura. Ordered him some bromide with the bicarbonate of potassium, also counter-irritation to the nape of the neck.

29th.—All pain and swelling of the joints gone; can move hands and legs freely; pulse 100; taking food; still has an inflamed throat, for which I prescribed.

3rd April.—Patient quite well, with the exception of being a little weak and anæmic.

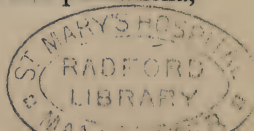
CASE XIII.—D. C., aged twenty-two, was admitted into the Royal Hospital on the 1st March, 1881, suffering from a lacerated wound of little finger of left hand, followed by an attack of diffuse cellulitis of forearm and arm. After free incisions he became convalescent at the end of three weeks. He had been up but one day when he began to expectorate bloody mucus, and complained of sore throat. His pharynx was found congested and œdematous; this continued for three days, when his temperature suddenly rose to 102° and pulse to 120. He also

complained of pain in the left ankle-joint. Cotton wool was ordered and milk diet. Next day left knee and elbow-joints were involved; temperature 103.4° , pulse 120. Great pain and acid perspirations were complained of. Dr. Harkin this day visited the patient by request. Upon examination of the heart a mitral whiff was detected. Emplastrum lyttæ, 3×3 inches, was now applied over the cardiac region for ten hours. Upon its removal the patient declared himself almost free from pain, although the joints were still swollen. The temperature, which, on the application of the blister, stood at 103.4° , gradually came down to 99° in forty-eight hours. The patient made a rapid recovery, and left hospital three weeks from the commencement of the rheumatic attack.

Perhaps the most striking fact in the history of these thirteen cases is the rapidity of the cure and the uniform appearance of delitescence within a few hours after the application of the blister, varied somewhat by the difference in the ages of the patients, their constitutional peculiarities, and other circumstances. In the majority anæmia was present; in six the disease was preceded by an attack of tonsillitis; one had urticaria; another had erythema nodosum as an accompaniment. There is a sort of order observed in the disappearance of the symptoms—the pain in the joints and insomnia are the first to disappear, then swelling and redness and stiffness of the limbs, then perspiration, muddy urine, and rapid pulse, then, among the last, generally about forty-eight hours after the application of the blister, the temperature becomes normal, about the period at which hyperpyrexia yields to powerful doses of salicin. I have also observed in a few cases an attempt at recrudescence upon the third day, which dies out in twenty-four hours. The immediate removal of the arthritic symptoms leaves us face to face with the cardiac ailments should they assume a troublesome development, to be treated in the ordinary way. It will be observed that there was not any relapse in the correct sense of the word. In the cases of S. and G., which required my after-attention, there was not a relapse, but a reproduction of the disease by a similar cause as at first—viz., by undue exposure to cold and moisture after almost complete convalescence. According to Latham, “perfect cure does not contemplate that after their removal diseases shall never return; but it does contemplate that before they can begin to return, their actuating cause will have to begin also.”^a

Having, then, given in detail a record of facts and phenomena,

^a Clinical Lectures. Vol. II., p. 417.



as observed by myself and professional friends, exhibited in thirteen consecutive cases of acute and subacute rheumatism, the question arises—Were these unprecedented results due to fortuitous circumstances, to accidental combinations, or to peculiar constitutional conditions of the respective patients? Or does the unvarying effect of this simple remedy indicate the existence of a hitherto unknown law that dominates and controls the manifestation, course, and termination of this disease? I cannot doubt that an invariable sequence of phenomena must have a common cause, that in the case of acute rheumatism those phenomena spring up from a seminal principle to which all our efforts should be directed; and if it be true that scientific therapeutics often elucidate the nature of disease, then the unfailing effect of this simple remedy goes far to prove that the *fons et origo* of this malady is to be found in the heart itself.

Cullen, in the preface to his “Nosology,” page 16, says—“Remedies cure diseases only in so far as they remove their proximate causes.” If, then, Cullen’s *dictum* be accepted, and if a blister over the region of the heart cures the disease, and even its articular complications, it surely would not be unsafe to infer that the proximate cause itself is located in the same region—the heart.

According to Dr. Peter Latham, “the treatment of diseases is, in fact, a part of their pathology. What they need and what they can bear, the kind and strength of the remedy, and the changes which follow its application, are among the surest tests of their nature and tendency.”^a I regard acute rheumatism as essentially a cardiac disease, as a specific form of endocarditis, generally allied with myocarditis, which, if not recognised and treated at its onset, speedily modifies the composition of the blood, the innervation and calorification of the body. In its ordinary course it soon gives rise to lesions in the textures, frequently in the pericardium, the pleura, the lungs, muscles, membranes of the brain, the neurilemma, and, in fact, in any organ accessible to arterial and nervous influence. I believe with Cullen, although in a wider sense, that its cause is external and in general known, in opposition to the believers in the humoral pathology, who attribute its origin to a *materies morbi*, or ζύμη in the blood. I look upon rheumatic fever as an inflammatory disease of local origin, and I agree with Dr. Pollock, “that the tendency of modern thought is to believe less in constitutional and more in local disorders, and to

trace every systemic disturbance to some tangible part of the body.”^a

The clinical history of endocarditis is both interesting and instructive. In the early part of this century many English physicians had recognised the intimate relation that subsisted between acute rheumatism and cardiac disease. Dr. Peter Latham was the first to discover the coexistence of abnormal murmur in every case of heart disease arising in rheumatism, but did not recognise its special meaning. Drs. Stokes and Watson further advanced our knowledge by separating the bellows from the friction sound, and by determining the relative value and meaning of each. In 1840, Bouillaud proved by *post mortem* examination that all those dying with bellows sound died of endocarditis, and he regarded the so-called cardiac complications as the normal features of the disease; he taught that one-half, other authorities taught that one-third, of the sufferers from acute rheumatism were also affected with endocarditis; but these calculations do not affect the question, as many observers, mistaking the products of inflammation for the symptoms, only recognise those as true cases of endocarditis in which they can detect by the ear the changes worked in the valves and lining membrane of the heart by acute disease. More accurate observers recognise the advent of cardiac inflammation by signs which often precede the endocardial murmur, such as tumultuous action of the heart, a certain length and roughness of the sounds, and other pathognomonic symptoms. Further, Pfeuffer and Hueter, quoted by Senator,^b look upon cardiac disease as the primary change and the articular disorder as the consequence, the latter stating that “endocarditis may be present without giving rise to either subjective or objective symptoms;” he also suggests “that it may very well precede the inflammation of the joints, even although not recognised till afterwards,” and says “that its presence must be assumed in those cases which appear to run their course without any cardiac complication.” Dr. Stokes, in his work on “Diseases of the Heart and Aorta,” states, “that cardiac inflammation may be developed unattended by any evidence of valvular lesion, and that he has seen cases that could not be explained on any hypothesis except that of the absence of murmur in endocarditis” (page 103). We may then fairly conclude that while the presence of endocardial murmur, along with the other

^a Harveian Lectures. British Medical Journal. Feb. 5, 1881.

^b Ziemssen's Cyclopædia. Vol. XXI., p. 22.

physical signs, will satisfy the most sceptical, its absence does not negative the existence of organic disease. This also explains the difficulty started by Aitken (Vol. I., p. 814), "why the rheumatic inflammation of the joints is frequently preceded by febrile disturbance, and also why sometimes the fever runs so high before any local symptoms have established themselves."

While, therefore, the cardiac origin of acute rheumatism commends itself strongly to our acceptance, there may be in addition what has been called an overruling neurosis, and doubtless where we have so much pain of a flitting character the nervous system must be deeply implicated, but it is difficult to determine whether the neurotic symptoms precede or follow the local phlegmasiæ. The rising school of modern neuro-pathologists, some of whom look upon gout as principally a neuropathy, might tell us that the initiative chill which ushers in the rheumatic attack sets up peripheral irritation, and that the cardiac and articular affections are the result of a disturbance of innervation. Indeed, the experience of late years, which has demonstrated the dependence of certain joint affections (arthritis deformans) upon chronic inflammatory changes in the spinal cord, might justify the idea of an irritation of nervous centres being suddenly propagated to the central origin of nerve supply to distant organs, so as by this means to stir up disease and pain. The special action of nerve influence upon joints has engaged the attention of eminent men, such as Charcot, Ball, Ord, and Buzzard. The last writer starts the hypothesis that these neuropathic osseous lesions may depend on an invasion of a part of the medulla oblongata closely adjacent to the roots of the vagi. "Is there something," he says, "which we may call provisionally a trophic centre for the osseous and articulatory system in the immediate neighbourhood of the roots of the vagi? The discovery of such a centre would materially help us to explain the remarkable association of cardiac complications with the joint affections of acute rheumatism, as well as the sweating character of the disease and the occasional hyperpyrexia which occurs in it." Should the pathogeny of rheumatic fever and of gout on further inquiry be found to be identical, it may also be discovered that, owning a common origin, they may also prove to be amenable to similar cure.

As opposed to the theory of the local origin of acute rheumatism, there are two hypotheses which divide the suffrages of the profession—viz., that of a *materies morbi* poisoning the blood and

being the cause of fibrinous deposits on the lining membrane and valves, and of the exudations into the pericardium and joints, and the other based on a chemical idea that the dyscrasis is owing to the presence of lactic acid in the blood, supposed to be generated by some faulty metamorphosis, and although intangible, yet existing—its presence being manifested by pain, and acidity in the sweat and urine. The first of these hypotheses is supposed by such authorities as Holland and Fuller to be demonstrated by the alteration in the composition of the blood, the increase of fibrin, the constancy of premonitory fever, and the frequent occurrence of metastasis—the heart and great vessels being in their view the passive depositories of fibrinous growths. Basham, Garrod, and Fuller incline to the opinion that some morbid matter is generated within the blood, or is not eliminated, and it was with the intent of destroying this virus that the eliminating treatment of Drs. Dechelly and Davies was introduced. It is remarkable, however, that according to Senator the plan failed to render the urine alkaline, and that if any poison were thereby removed from the system it was not an acid, as the serum produced by vesication was invariably alkaline. This observation replies by anticipation to the assertion that the disease has its origin in an acid state of the blood, as advanced by Dr. Prout. With the intention, then, of destroying the lactic acid assumed to be present many practitioners prescribe alkalies in large quantities. If relief is experienced the argument takes this shape, that as alkalies are in their nature antacid, there must have existed in the circulation of the patient a sensible amount of acid. The fact too of the urine becoming alkaline sometimes during their use gives further countenance to the assumption. The admitted fact, however, that neither uric nor lactic acid has ever yet been discovered in the blood of the rheumatic patient, though plentiful in that of the gouty, should settle this question in the negative.

The lactic acid hypothesis has been recalled to revived consideration by a paper published in *The British Medical Journal* by Balthazar Foster, in December, 1871. Under the heading of "The Synthesis of Acute Rheumatism," he publishes two cases bearing upon the point, and expresses the opinion that "these facts will strengthen the evidence which points to lactic acid as the poison of rheumatic fever." The observations arose incidentally from an inquiry into the effects of certain drugs (among the rest lactic acid) on the sugar excretion in diabetes. It is not my intention to

question the correctness of the facts adduced by so accurate an observer. The results are quite consonant with the recognised effects of lactic acid. I must, however, take exception to the conclusions deduced from them, and beg to offer a solution more in accordance with the true clinical significance of the published signs and symptoms.

In the first case, Wright, suffering from diabetes, who had never suffered from rheumatism, is fed on a strictly animal diet, nitrogenous—a diet which in healthy persons predisposes to a certain blood disease, not rheumatic however. Consequent upon the internal administration of the lactic acid, he had six attacks of articular pains fairly attributable to that agent; but, when we come from synthesis to analysis we find that when in place of describing “acute pains in the joints and flying pains about his limbs,” as the result of the dose, B. Foster particularises the joints affected. He says—“The small joints of the fingers of both hands, the wrists, and in a less degree the elbows had become red, swollen, and painful. Moderate perspiration and heart clear. Second attack.—Metacarpo-phalangeal and first phalangeal articulations of the first and second fingers of each hand were red, hot, swollen, and painful. Less pain in the knuckles in the evening. On the evening of April 5th and 6th, after taking the medicine, the pains returned to the knuckles and left wrist. April 13th—Right wrist. June—Two attacks in hand and wrists. July 8th—Wrists and elbows. July 11th—Right and left wrist and knuckles of right hand; left knee red and swollen.”

In the second case only one attack occurred, and the evidence derived from this case is little worth, since the only joint swollen was the right knee, which was faintly red. How unlike an attack of acute rheumatism, in which we look for a rigor, swelling and pain in the large articulations, excessive sweating, muddy urine, and heart affections. Does it not closely realise our conception of gout, which selects the smaller joints, the fingers, wrists, and knuckles, for its *habitat*, and what more efficient way could we propose to induce an attack of gout than by introducing into the system lactic acid, generally recognised as the potent factor of the disease, and always present in the blood of the gouty patient? We cannot in this inquiry overlook the fact of the intimate connexion that exists between gout and glycosuria. Garrod states that gout and diabetes occasionally occur in the same individual, and Dr. Dyce Duckworth, in a very suggestive paper which appeared in *The*

British Medical Journal, March 26th, 1881, refers to the remarkable relation which exists between gout and glycosuria. "Diabetes mellitus," he says, "is met with in certain members of gouty families, some having gout alternating with glycosuria, the glucose alternates with uric acid." Thus it would appear that Dr. Foster's cases are instances of glycosuria and gout appearing in the same individuals, and one can understand how lactic acid, whether pure or altered in its passage to the blood, would react upon the sugar or glucose in the system, and speedily change the saccharine to the acetous fermentation. Had Foster thought of testing the nature of the disease by a blister, the absence or the presence of lactic acid in the serum effused would have aided in the diagnosis.

But more cogent, in my mind, than critical commentary, more conclusive than any inductive or deductive process of reasoning, more fatal to the hypothesis that acute rheumatism is a disease of zymotic or of constitutional origin, is the fact I have demonstrated that it may be speedily and effectually cured by a topical external remedy, by one which could not possibly modify a diseased condition of the blood or neutralise an acid poison permeating the system.

In presenting these cases and this novel plan of cure, knowing how prone human nature is to self-deception, I have carefully guarded against the personal element by inviting the presence and co-operation of medical men of ability and scientific acquirements and independent judgment. I shall conclude this paper by expressing the hope that this simple plan will commend itself to the consideration of the profession at large, as, while aiming at a truer and simpler pathology, at one fell stroke it puts an end to the pains and perils of polyarthritis, and saves the helpless invalid from the horrors of meddling polypharmacy.

ART. X.—*Physical Examination of the Abdomen in Labour Patients.*^a By WILLIAM C. NEVILLE, M.A., M.D., M.A.O., Univ. Dubl.; Assistant to the Master, Coombe Lying-in Hospital.

METHODS of physical examination as applied to labour patients are mainly two—external examination, including abdominal inspection, palpation and auscultation; and internal or vaginal examination.

^a Being portion of a Thesis on The Modes of Examining Labour Patients, read for the degree of M.D., Univ. Dubl.

The former of these methods is so scantily treated of in English obstetric works, and is so seldom systematically adopted in practice, that I think the following *résumé* of its chief uses may possibly prove of interest to the reader:—

Abdominal Inspection shows the size, shape, and general appearance of the abdominal enlargement; its inclination towards one side or the other; the existence of cutaneous pigmentations, lineæ albicantes, enlarged veins, or œdema; the condition of the umbilicus, &c. It will be convenient at the same time as this method to consider that of—

Abdominal Palpation, in employing which the patient should lie on her back, the shoulders being slightly raised and the thighs flexed; thus relaxing, so far as is possible by position, the abdominal muscles. The flat surfaces of the hands (warm) are then to be laid gently on the abdomen, the patient being perhaps engaged in conversation so as to prevent her attention being exclusively directed to the examination. The ulnar edges, or tips, and whole palmar surfaces of the hands may then be dipped through the abdominal walls, as these gradually relax with the increasing confidence of the patient. Working together with both hands in this way we may map out the shape and note the consistency of each part of any abdominal tumour, such as that of the pregnant uterus. The combination of these two methods of examination, inspection and palpation, will yield valuable elements in the recognition of—

- (1). A first from a repeated pregnancy.
- (2). The existence and period of pregnancy.
- (3). Fœtal life.
- (4). Fœtal posture and position.
- (5). Multiple pregnancy.
- (6). Excess of liquor amnii.
- (7). A distended bladder.
- (8). A displaced uterus.
- (9). Any abdominal tumour complicating pregnancy.

At full time the summit of the uterus can be both seen and felt midway between the umbilicus and xiphoid cartilage. The fundus has fallen forwards and the umbilicus is somewhat prominent. The outline of the uterus is difficult to define with distinctness during a first labour, the abdominal walls being then usually tense, firm, and compressible only with difficulty. In pluriparæ they are soft, compressible, and even wrinkled, while the uterine walls are also more relaxed in the intervals between pains, allowing

the foetal body to be proportionately more easily felt and distinctly traced. There is another point of importance with reference to the distinctions between pluriparæ and primiparæ which may here conveniently be noted. In the former the foetal head is usually to be felt through the uterine and abdominal walls, lying above the pelvic inlet, towards the commencement of labour. Here it cannot often be felt in primiparæ, or, if felt, its presence above the brim would indicate the probable existence of some obstruction to its entrance into the pelvis.

The discovery through the abdominal walls of a solid body, capable of being displaced through fluid within the uterus, and of foetal movements felt by a practised hand, will assure us at the same time of the existence of pregnancy and of the life of the child. From the fifth month of pregnancy onwards we may, by combining the use of both hands, obtain the sensation of a solid body being displaced, and then returning through surrounding fluid. The sensation of such a body conveyed to the finger, capable at times of being even tossed as it were from one hand to the other, is known as that of external ballottement. It may be obtained easily in proportion as the amount of fluid is great compared with the bulk of the floating body. Hence it normally ceases to be distinct after the seventh or eighth month. At full term, however, it may be still not uncommonly obtained, and its presence is then proof of the existence of an excess of the liquor amnii.

The extremities of the foetal body, as it lies *in utero*, being the breech and the head, these, and especially the latter, are most readily displaced, and are the only foetal parts which yield true ballottement. The foetal limbs are not susceptible of such sudden displacement, though they can be made to shift their position by external manipulation apart altogether from movements of the trunk. Limbs usually resume their original position on the withdrawal of the pressure exerted on them. Such movements are quite different from those of ballottement, and may be readily effected, in the absence of uterine contraction, even when the liquor amnii has escaped.

If, as is usually the case, the foetus be longitudinally placed, the abdominal tumour will appear of the normal erect oval shape; if transversely, the abdomen will be lengthened out in a corresponding direction, and there will be a relative absence of foetal parts above the umbilicus.

The breech, generally found occupying the fundus, is smaller, softer, more irregular, and sharply convex in outline than the head, from which more particularly it has to be diagnosed. The breech is, moreover, in closer connexion with foetal small parts than the head, and cannot, like it, be moved without at the same time imparting movements to the entire trunk. This latter point of distinction, however, I regard as being of more theoretical than practical interest. In a few multiparæ I have been able to localise the foetal head through abdominal and uterine walls by a peculiar crackling feel which the sutures of its thin bones yielded to firm alternating pressure of the fingers. The only cases in which I obtained this characteristic sign were in premature labours where the liquor amnii had escaped, and once in a labour at term where the child had been for some time dead.

In abdomino-anterior positions careful palpation will detect foetal limbs moving or movable beneath the abdominal and uterine walls. In dorso-anterior positions they can be felt only, if at all, deep along the sides of the uterus. Here the position of the child's back will cause the region of greatest resistance to palpation to be along the left or right antero-lateral uterine wall. In first and fourth cranial or breech-positions the bulk of the foetal body may be felt to lie to the left and the limbs to the right side of the uterus, while the reverse obtains in cases of second and third positions. In making these observations it will be necessary to avoid considering the linea alba as necessarily coinciding with the middle line of the uterus which, in consequence of a frequent obliquity, lies rather to its right hand side.

In the case of a multiple pregnancy inspection will show that the abdominal tumour is unusually large and broad. A somewhat longitudinal furrow may be seen, and rendered more distinct by palpation. More than two large foetal parts may be felt through the uterine walls, and the movements of foetal limbs on both sides of the uterus at the same time is another point of diagnostic importance.

On inspection the outline of a distended bladder may be seen more or less distinctly in the hypogastrium, and palpation will further reveal its true nature by eliciting fluctuation. Besides interfering with our examination such a retention of urine is a not uncommon cause of deficient uterine contraction, and its immediate recognition is the more important since it may be readily removed by the passage of a catheter.

In some pluriparæ the extremely relaxed condition of the abdominal walls, coexisting perhaps with a partial separation of the recti muscles, allows the uterus to become unduly anteflexed—in some cases attaining even to a pendulous condition. This displacement, or an exaggerated lateral obliquity of the uterus constituting lateriflexion, may at once be seen and rectified in some degree at least by attending to the posture of the patient, who should lie on her back, or on that side which is opposite to the flexion. A binder may also with advantage be applied with just sufficient firmness to support the uterus in its proper place, thus allowing the dilating and expelling powers to be directed in a proper channel.

Abnormal abdominal enlargement, general or local, coexisting with pregnancy and, perhaps, gravely complicating labour, may be caused by the presence of ascites, an ovarian cyst, or fibrous tumour of the uterus, &c. If any such enlargement is either seen or felt, a careful examination as to its exact nature must be made. This examination must be conducted on general principles; but the subject is too extensive a one to be here more than passingly noted. In all the above cases palpation must be employed during the absence of uterine contractions. The hand when laid flatly over the uterus during a “pain” will gauge the energy of its contraction by the duration and amount of the hardening which it undergoes, thus forming an element in our estimate of the probable progress and duration of labour. It will also serve to distinguish “true” from “false” pains, since the latter are not attended by that shrinking and hardening of the uterus which show that its muscles are contracting.

Auscultation of the uterus during labour may with almost equal convenience be made either directly—a towel only intervening between the ear and abdomen—or indirectly through a stethoscope. I am inclined to prefer the latter method in uterine auscultation, believing that it enables us to localise sounds more accurately, a point of considerable importance in reference to the foetal heart-sounds. I have found the binaural stethoscope of especial use in this examination, both because of its flexibility and of its intensifying sounds; but it is inconvenient to carry and more difficult to become accustomed to than the more common form of the instrument. At full term three sounds specially connected with pregnancy are revealed by auscultation. These are in the order of their importance:—(1) The foetal heart-sounds;

(2) the uterine souffle; and (3)—much more rarely than either of the former—the funic souffle. Perfect stillness will be required when seeking for these sounds, and it will be well to conduct the examination by moving the ear or bell of the stethoscope from point to point of the abdomen on some definite and uniform plan. The foetal heart-beats are recognised as distinctly rhythmical, frequent (120–160 per minute) sounds, which have been aptly compared to the muffled beating of a lever watch. The points to be noted in connexion with these sounds are:—(1) their point of maximal intensity, together with the area and main direction of their diffusion; and (2) their strength, regularity, and rapidity. They are of clinical importance in several ways:—

- (1). As yielding certain proof of pregnancy and foetal life.
- (2). As forming important factors in the diagnosis of foetal posture, position, and of multiple pregnancy.
- (3). As affording knowledge of the child's health, and in this way frequently indicating treatment.

The beats, where loudest, should be so distinctly heard as to be capable of being counted, Prof. Karl Schröder thinking this essential for their certain recognition. The point of maximal intensity varies according to the presentation and position of the child. In dorso-anterior they can be heard much more clearly than in dorso-posterior positions, no doubt because they are conducted best through the back of the child, being heard loudest where it comes into most immediate contact with the abdominal walls of the mother. This, in the first and most frequent cranial position, is at a point about midway between the umbilicus and left anterior superior spine; in the second position it is at a corresponding point on the right side of the linea alba. In the third position they are heard on the right and in the fourth on the left side, occupying corresponding positions, but comparatively indistinct, not being very well conducted through the chest walls and limbs of the child. From numerous observations, made with a view to ascertaining the value of fixing the point at which these sounds are best heard in the diagnosis of foetal position, I feel certain that this method has not yet received that amount of attention to which the general accuracy of its results entitle it.

In cases of breech presentation the sounds of the foetal heart are heard most clearly higher up in the abdomen, slightly to the left or right side of the umbilicus, according to the position of the child, as in cranial cases. In transverse presentations they are

usually to be heard lower down, above the symphysis, or in one or other of the iliac regions. It has been observed that in shoulder or arm presentations these sounds will be best conveyed across the abdomen, thus following, as might *à priori* have been expected, the horizontal position of the foetal body. Possibly this distinction might be found to hold good in cases of dorso-anterior positions of the foetus, though in any case it cannot prove of much practical usefulness. The auscultatory signs of cross-births do not appear to me to be by themselves of a satisfactory nature, and, indeed, I believe that auscultation gives more reliable information of the "position" than of the "presentation" of the child.

In the case of twins we can often hear heart pulsations in two places, separated by a line along which they cease to be so clearly audible. If along with this phenomenon we can establish a difference in the frequency of the beats as heard in the two places, we may assume the existence of a multiple pregnancy.

During labour it is often of importance to notice marked alterations in the frequency or strength of the foetal heart-sounds. Increased rapidity, slowing, weakening, or irregularity, all point to danger threatening the life of the child, and form a class of indications which even by themselves may justify us in adopting measures for accelerating the delivery of the child. In lingering or difficult labours, where the liquor amnii has escaped for some time, these indications are especially likely to arise.

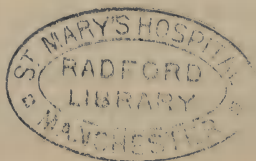
The *Uterine Souffle* (placental bruit) is a blowing murmur, synchronous with the mother's pulse and variable, even in the one patient, in character and position. It may be heard from the fifth month of pregnancy, and may partially cloak the sounds of the foetal heart. Its practical importance is small. Formerly its existence was relied on as a sign of pregnancy, but it is now well known that it may be simulated by an identical sound which is of common occurrence in cases of uterine tumours, and may even, according to some authorities, be occasionally met with in ovarian cysts. The murmur is modified during labour by the uterine contractions, rendered harsher and intensified by their advent, disappearing during their acme, and returning with their decline. It is quite independent of the child's life.

This souffle was formerly supposed to be formed in the placental sinuses, or where the large uterine arteries poured their blood into these cavities. It was then supposed to indicate the site of the placental attachment, a knowledge of which may sometimes prove

of use, as, for example, in enabling the operator to steer clear of the placenta when introducing a catheter into the uterus for the purpose of inducing premature labour. Now the sound is commonly regarded as being formed in the tortuous arteries themselves, its formation being, perhaps, helped by the condition of the blood during the end of pregnancy approximating to that found in chlorosis. It has been stated that it may be heard even after the expulsion of the placenta—a fact, if it be one, which I have been unable myself to verify. These views, if correct, would prevent us accepting the position of the sound as being necessarily a certain guide to that of the placenta.

My own observations on this point lead me to infer that, though perhaps not always a certain, it is nevertheless a generally reliable guide, and while I have often remarked the fluctuating intensity of the *souffle*, as heard over a certain area, I have never been satisfied that it completely altered its position. In six out of eight cases of placenta prævia in which I have noted this point, the sound was heard low down, over the symphysis pubis, or one of Poupert's ligaments. In one it was not audible anywhere, and in another it was situated towards the upper limit of the left iliac region. The most common situation of the sound, high up at one side or other of the uterus, certainly corresponds to what the experience of many observers has led them to consider as the most common site of placental attachment.

The *Funic Souffle* is described as a whizzing murmur, synchronous with the sounds of the foetal heart, and occasionally to be heard where these are loudest. In a few only out of many cases in which I have carefully listened for it have I been able to recognise it. Certainly it cannot be so frequently heard as, it is stated by some continental authorities, in 15 per cent. of all cases. Some sharp flexure of the funis as it leaves the umbilical ring has been assigned as its cause. It may come and go, and while its existence would prove the life of the child, this would in any case be more readily settled by the heart-sounds themselves. Perhaps its existence would be a point in favour of abdomino-anterior foetal positions.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON ANATOMY.

A Directory for the Dissection of the Human Body. By JOHN CLELAND, M.D., F.R.S. Second Edition. London: Smith, Elder, & Co.

WE are pleased to welcome a second edition of this excellent and useful little manual. As the author states, it is simply a guide to dissecting-room work, and does not in any respect interfere with the many systematic anatomical works, but in a small space it contains concise and admirable directions—the description of the dissection of the brain and pelvis being particularly good. The directions for dissections which appeared in the seventh edition of “Quain’s Anatomy” formed the basis of this work, which in the present edition has been much amplified.

We are of opinion that if the student would use this little manual in the dissecting-room, and keep his systematic anatomical books for home reading, he would acquire a sounder knowledge of anatomy than if he fell into the too common mistake of looking at the subject merely as an illustration of what he finds in his text-books.

Anatomy of the Arteries of the Human Body, Descriptive and Surgical, with the Descriptive Anatomy of the Heart. By JOHN HATCH POWER, F.R.C.S.I. Third Edition by WILLIAM THOMSON, A.B., F.R.C.S. With Illustrations by B. W. RICHARDSON, F.R.C.S.

POWER on the Arteries has long been a well-known and popular book with students in Dublin, and the present edition has been much improved at the hands of Mr. Thomson. The method adopted of combining with anatomical details the practical surgical deductions as illustrated by the record of operations is one much to be commended in books for students as showing the importance of an accurate knowledge of anatomy.

It is a pity that the intention of the editor, as stated in the

preface, of obtaining a full record of the ligature of arteries during the last twenty years in Ireland has been frustrated by his not having obtained answers from most of the hospital surgeons to whom he had applied for information.

Amongst the more important additions which we notice are a graphic method of exhibiting the relations of the arteries, which will no doubt prove of use to students in remembering these somewhat difficult matters to the beginner. On page 117 we find a correction of an error to be found in nearly all the usual text-books of anatomy. In them the ganglion of Ribes is stated to be situated on the anterior communicating artery, whereas the structure described by Ribes as the seat of communication between the sympathetic chains of both sides was the pituitary body.

The surgical portion of the work is very good, and the descriptions of operations are clear and concise, being greatly improved by the addition of many of the well-known and excellent woodcuts from Bryant's "Surgery," and the historical portion is well done in the present edition. Many of the long and comparatively unimportant cases which occurred in the former editions have been excluded or curtailed. We, however, think that the description of Wardrop's modification of Brasdor's operation for innominate aneurism might with advantage be a little fuller. The only case recorded of ligature of the subclavian alone for innominate aneurism is the original one by Wardrop in 1827. No mention is made of the successful case recorded by Broca or the more recent one by Bryant.

The book is one which should be in the hands of every practising surgeon and student of anatomy.

The Anatomist: being a Complete Description of the Anatomy of the Human Body. By M. W. HILLES, formerly Lecturer of Anatomy and Physiology at the Westminster Hospital School of Medicine, &c. Second Edition. London: Henry Renshaw.

THE above title would scarcely suggest to the reader that the work was a small pocket cram-book of 306 pages, but such is the case, and the fact that it has reached a second edition shows that the demand for this class of literature still exists. The information that it contains is in many cases so condensed as to be utterly unintelligible. It does not even pretend to be a guide to dissection, and is still less suitable for a text-book for home reading. The present edition is enlarged by the addition of 171 woodcuts,

most of which are better than those usually found in similar publications, but we have so frequently in these columns decried the multiplication of cram-books that we think no further notice of this is necessary.

The Liverpool Medico-Chirurgical Journal. No. I. Pp. 240.
Liverpool Medical Institution. July, 1881.

It is intended that this Journal shall be published half-yearly, under the direction of a committee appointed jointly by the Medical Institution and by an influential meeting of members of the profession, who desired the establishment of a representative Medical Journal for Liverpool and the district. If we take the first of the series as an average of the future instalments we may unreservedly congratulate English medical journalism on a valuable accession to its ranks.

The first 45 pages are occupied with original articles, 10 pages are given to reviews of books, and the remainder to a set of exceedingly well-reported Transactions of the Liverpool Medical Institution. One of the original papers—"Clinical Observations connected with the Surgery of the Œsophagus"—is from Prof. Annandale's pen. He calls attention to the fact that we must often expect obstruction to the passage of instruments not only at the point of stricture, but also at other points of the canal nearer to the stomach. This second obstruction is of course spasmodic, and yet he has not in his experience found that chloroform or any other anæsthetic is of use to prevent it when any irritation such as that of a bougie is applied. He believes that the difficulty of diagnosing the impaction of a foreign body in the œsophagus results from two causes—one, the spasmodic contraction of the canal round it, and, secondly, the employment of a soft or too small bougie for its detection. The instrument he finds most successful is an oval-shaped metal bulb, having a diameter at its thickest part of rather more than half an inch, and fixed to the end of a long and pliable whalebone handle.

Dr. Davidson reports two cases of locomotor ataxy treated by nerve-stretching. In one case each sciatic nerve was stretched for 30 seconds by a weight of 40 lbs., about half its breaking weight; in the other a weight of 38 lbs. was applied for two or three minutes. There was some improvement, though the results were not brilliant. Dr. Wallace has an elaborate article on

“Radical Cure of Prolapsus of the Uterus.” Amongst the “Transactions” we notice that Professor Clay has almost found a convert to the efficacy of Chian turpentine in Dr. Alexander, Surgeon to the Workhouse. He believes that in an undoubted case of uterine cancer Chian turpentine had a decidedly good effect, while in six cases of obstinate leucorrhœa its favourable results were most marked. Dr. Carter summarises the treatment of 431 cases of acute and subacute rheumatism. He finds that the effects of salicin and its congeners are most decided in acute uncomplicated cases, but are still very striking even where from previous attacks or at an earlier stage of the same attack heart complications exist. He will not call these drugs a specific for the disease, since in about 8 per cent. of his cases they failed to give relief. He thinks they should be given in large and frequently-repeated doses at the outset, and that their administration should be continued three or four times a day for a few days after the patient has begun to move about the wards. His general practice is to give salicylic acid in 10-grain or salicylate of soda in 15-grain doses every hour to every fourth hour. He thinks Dr. Caton’s proposal to give bromhydric acid, with the view of lessening the tinnitus, &c., produced by the drugs, well worth an extended trial. Under the head of “Points in the Treatment of Acute Synovitis of the Knee-joint,” Mr. Mitchell Banks graphically details three cases in which he was worsted by the bone-setters, who drew their bow at a happy venture in breaking up fibrous adhesions of joints at a point when men of science should have intervened.

On the ætiology of aneurism Dr. Barr is sceptical as to syphilis and aneurism being so generally to blame as they are held to be. He, however, admits that when you have got a hard worker and a hard drinker you have two important factors leading to atheroma. The primary cause he believes is high arterial tension, the result of over-work.

Wood’s Household Practice of Medicine, Hygiene, and Surgery.

Edited by FREDERICK A. CASTLE, M.D. Two Vols. Pp. 1,761.

London: Sampson Low, Marston, Searle, and Rivington.

THIS work is described on the title-page as a “Practical Treatise for the Use of Travellers, Seamen, Miners, and others.” When we mention that it occupies nearly a cubic foot of space and weighs almost a stone, some doubts will be entertained whether

these classes of people will find it a practicable companion. Its preface states that it has been undertaken with a belief that it is possible to supply to persons having no medical education such information as will enable them not only to meet emergencies which often arise in the absence of professional advice, but will also help them to understand the nature, course, and results of many diseases, the description of which is not ordinarily to be found outside of technical books. It further explains that where immediate assistance is demanded, or where the physician is inaccessible, or in minor maladies where a physician is seldom consulted, the directions contained in it will be found practically useful—in fact, from the preface one would conclude that the work was a book on emergencies for lay readers, with some chapters on Nursing and Personal Hygiene appended. It has, however, far outgrown these modest limits—nor is the reason far to seek. Over thirty writers have contributed to it, and as each has tried to treat his or her (for there are ladies amongst the contributors) particular subject as exhaustively as possible, a sort of encyclopædia has been the result. It is only fair to state that amongst the writers are some of the leading American school and clinical teachers. To Dr. Lewis Smith belongs the section on Diseases of Children, to Dr. Hartshorn that on General Diseases, to Dr. Mary Putnam-Jacobi that on the Nervous Diseases of Infancy and Childhood, to Dr. Piffard that on Syphilis. Dr. Buck has written the article on the Ear, Dr. St. John Roosa on the Eye, Dr. Cohen on the Throat, Dr. Van Buren on the Rectum, and Dr. Alfred Loomis on the Respiratory Tract. Such names will show that there is no lack of eminence amongst the authors whose services have been secured. But, as might be expected, the outcome of their labours is disappointing. To men who are accustomed to write for professional readers, and to work in limited though definite directions in the way of original research, the task of expressing in popular language a bird's-eye view of a wide scientific field is novel and to a considerable extent embarrassing. They are not in a position to discriminate between the common-places of knowledge with which every man and woman of sense is familiar, and the facts that are almost exclusively the possession of the physicist or the physiologist. Hence their information is sometimes puerile in its redundancy, sometimes for lay minds uselessly minute. Thus, on the eighth page of the first volume, we have, in Dr. Yale's paper on Anatomy, descriptions and diagrams to

show how glands are formed by inversion or recession of the secreting membrane to form cavities; and on the next page there is a drawing of pigment epithelial cells from the chorioid coat of the eye, highly magnified. There are also excellent woodcuts to show the connexion of the columns of the medulla oblongata with the cerebellum and the cerebrum, and equally good letterpress; but as contributing to a "practical treatise for the use of travellers, seamen, and miners," we fear it is, to use a popular æsthetic phrase, "too utter." On the other hand, the chapter on Clothing is meagre in the extreme. The section on Hygiene is good, especially as regards housebuilding and ventilation; and gymnastics have ample justice done to them by the illustrations. As might be expected surgical subjects are treated more successfully than medical, the chapters on Accidents, Emergencies, and Poisoning being in our opinion the best in the book.

It is but due to the publishers to state that we have never seen either better paper or clearer type. We believe, however, that the work would have been far more generally useful had it been issued in a series of small handy volumes like the Health Primers, with one or several of which the "traveller or seaman" might have provided himself, instead of these compendious tomes whose bulk, unless ballast be an object, forbids all idea of portability.

American Nervousness: its Causes and Consequences. By GEORGE M. BEARD, A.M., M.D. New York: G. P. Putnam's Sons. 1881. Pp. 352.

THE gift of a "guid conceit o' himsel'" has been amply bestowed upon Dr. Beard. The present work, his preface states, is to be regarded as a chapter on Causes of Nervous Exhaustion or Neurasthenia (a former book), "with these qualifications, that it embraces the whole domain of nerve sensitiveness and nerve susceptibility that lead to the more definite condition of nervous exhaustion, and that it is of a more distinctly philosophical and popular character than that treatise which was specially addressed to the professional and scientific reader." The various subjects discussed "have occupied his mind from the time when he first began to think," and many of the thoughts bear the impress of having been elaborated at that early period of his life. Moreover, "the criticism which will be given to the philosophy of this work has been in a considerable degree anticipated," since those of *The*

Times, *Spectator*, and *Saturday Review* have been answered; "and in Germany there has been endorsement rather than criticism." It was in Spain, the land of beauty, that Don Giovanni scored most of his successes. Dr. Beard may catalogue with equal triumph approving plaudits in the land of thought. He does not, however, name any of these German authorities, nor indeed any English, except Dr. Crichton Browne, who would probably now have independent testimony to bear—at least upon the subject of hypnotism. As an excuse for this omission it is urged that, "to make the list of authorities of sources of facts complete, would require another volume at least half the size of the present one."

An epitome of the philosophy of the subsequent chapters is provided in the preface. Nervousness, we are told, is strictly deficiency or lack of nerve force:—"The primary cause of the very rapid increase of nervousness is modern civilisation, which is distinguished from the ancient by these five characteristics—steam power, the periodical press, the telegraph, the sciences, and the mental activity of women." Then there are secondary and tertiary causes, which are: "climate and institutions—civil, political, and religious." But the greater prevalence of nervousness in America is a complex resultant of a number of influences, "the chief of which are—dryness of the air, extremes of heat and cold, civil and religious liberty," &c. Then the signs of American nervousness are given. Amongst these are enumerated the nervous diathesis, chronic catarrhs, the unprecedented beauty of American women, frequency of trance and muscle reading, the strain of dentition, puberty and the change of life, American oratory and humour, and change in the type of disease. However, at the bottom of this Pandora's box of dangers there is consolation. The seventh paragraph undertakes to show that side by side with this increase of nervousness, and partly as the result of it, longevity has increased, and the eighth prognosticates a bright side for the physical future of the Americans. The evil of their nervousness will tend to correct itself by more inventions, so as to diminish its friction, &c. Dr. Beard's views on medical education, pp. 325 *et seq.*, are a fair sample how originality may be cheaply sought by merely reversing other people's conceptions. We append some specimens:—

"Modern education is burglary. . . . Medicine has been taught in all our schools in a way the most unphilosophical. . . . The conventional, hereditary, orthodox style is for the student to take systematic

text-books, go through them systematically from beginning to end, and attend systematic lectures, reserving study at the bedside for the middle and later years of his study, the didactic instruction coming first, and the practical instruction and individual observation coming last. Psychology and experience require that this should be reversed. . . . System in text-books is a tax on the nerve force, costly both of time and energy, and it is only by forgetting what has been taught them in the schools that men ever attain eminence in the practice of medicine. The first lesson and the first hour of medical study should be at the bedside of the sick man; before reading a book, or hearing a lecture, or even knowing of the existence of a disease, the student should see the disease."

Enough has been quoted to show the literary and philosophical merits of the book. We have no doubt it is worthy of its companion volume on *Nervous Exhaustion*, and perhaps illustrative of that malady.

The Examination of the Pulse, including a Description of the Sphygmograph. By BYROM BRAMWELL, M.D. Edinburgh: Maclachlan & Stewart. 1881. 8vo. Pp. 15.

THIS is a lecture delivered in the Extra-Academical School of Medicine in Edinburgh, and published in *The Edinburgh Medical Journal* for last December. The author has had it republished in separate form for the use of students.

It contains a good description of the sphygmograph and the precautions which must be observed in its application. The text is profusely illustrated by pulse tracings, showing all the varieties of curves which are got under different conditions of health and disease, and the clinical indications supplied by each form of pulse are fully stated.

We think this lecture will prove very useful to students and others who are beginning to work with the sphygmograph.

Nouveau Dictionnaire de Médecine et de Chirurgie pratiques. Illustré de figures intercalées dans le texte. Tome XXX. Paris: J. B. Baillière et Fils. 1881. 8vo. Pp. 841.

THIS magnificent work is now approaching completion. Thirty volumes have been issued, and some five volumes only remain to be published. The manner in which the Dictionary is being brought out reflects great credit on M. le Docteur Jaccoud, the head of the editorial department.



The principal articles included in the present volume are—*Pseudarthrosis*, by P. Denucé; *Psoïtis*, by Hertaux; *Psoriasis*, *Purpura*, *Pustules*, by Hardy; *Pterygion*, by Panas; *Pubis*, by Schwartz; *Puerperal State* and *Puerperal Fever*, by Stoltz; *Pulverisation*, by Beni-Barde; *Pupil*, by Abadie and de Beurmann; *Purgatives* and *Regimen*, by Luton; *Purulent Infection*, by Alphonse Guérin; *Quinine* and *Cinchona-Bark*, by Prunier and Guès; “*Rachis*” and *Rachitis*, by Lannelongue; *Rabies*, by Signol and Doléris; *Spleen (Rate)*, by M. Jeannel; *Rectum*, by Gosselin and Dubar; *Kidney (Rein)*, by Marduel and Labadie-Lagrave.

The last-named article occupies 216 pages. M. P. Marduel contributes the sections on the Anatomy and Physiology of the Kidney, Wounds of the Kidney, Nephrotomy, and Nephrectomy. The Medical Pathology of the Kidney is treated of at length by M. Labadie-Lagrave, who postpones to the next volume the consideration of the medico-chirurgical affections of this organ, including pyelitis and pyelonephritis, hydronephrosis, tumours, parasites, defects of formation and of development, and he promises to conclude the article with the subject of *ectopia renalis*.

The Young Doctor's Future ; or, What shall be my Practice? By E. DIVER, M.D. London: Smith, Elder, & Co. 1881. Pp. 100.

THE most useful part of this little book is the first chapter, inasmuch as it gives the names, addresses, and terms of the different firms composing our mercantile marine. Novices will thus be able to communicate directly with the secretaries of companies, instead of seeking appointments through the intervention of medical agents. The Army, the Indian, and the Naval Medical Services have their chief provisions detailed, and in the case of the last-named service the modified regulations just issued are appended. The author wisely leaves the candidate to judge for himself of the merits or demerits of the public services. In the two remaining sections on “General Practice” and “Appointments,” the specific information is meagre. There is much excellent advice on the deportment of the practitioner and on the relations of doctor and patient, but we looked chiefly to find hints how to examine into the *bona fides* of a practice offered for sale, or how to estimate the value of an “introduction,” or the proportion of a clientèle that will adhere to the incomer. Also, in a work of this kind the prospects of medical men in the Colonies should not have been

omitted. The *pros* and *cons* of parochial appointments are discussed with marked good taste, but the subject of clubs, on which much might be said for the advantage of practitioners of long experience as well as of no experience, has been almost entirely passed over. In a future edition we hope the author will throw more light upon the monetary value of practices, so as to help the small capitalist, apart from the medical agent's assurance, to discriminate between a sound investment and a mere pretence.

AMYL NITRITE AS A CARDIAC STIMULANT.

DR. EDWARD T. REICHERT, of Newark, N.J., contributes to *The New York Medical Journal and Obstetrical Review* for July, 1881, an article in which, from a critical consideration of the more important of the literature bearing upon the subject, as well as from experimental data of his own, he argues that nitrite of amyl acts as a direct stimulant upon the heart. The author admits that the increased action of the heart under the influence of the drug may be due, to a certain extent, to its depressant effect upon the pneumogastrics, as shown by Filehne, Mayer and Friedrich, Dugau and Brunton; but he thinks that the deductions of the first three of these observers must be accepted with allowance, because of the very indirect way in which they sought to decide this action. Dugau, whose view closely coincides with Pick's (that there is a compensatory relation between the action of the heart and the condition of the vasomotor system, so that when the vascular channels are open the heart will naturally beat faster to overcome the excessive drainage, and *vice versa*), was misled by not discriminating between the action of the drug on the vasomotor system and its effect on the heart. With the action of the vasomotor system practically abolished (as was accomplished in Brunton's experiments, in three of which he compressed the aorta below the diaphragm and divided the spinal cord, the disturbing influence of respiration and struggles on the animal's part being done away with by means of curare), any change in the arterial tension must be the result of direct cardiac action; and in all of Brunton's experiments there was a primary and marked rise of pressure, which equalled as much as a fifth of the normal. The nitrites affect the blood pressure in two ways—by stimulating the heart directly, and by depressing the vasomotor system, especially the centres. They are direct stimulants of the heart, increasing the frequency of its action and the amount of work done in a given time. Clinical evidence supports this view; for were it otherwise the action of amyl in chloroform poisoning, in collapse and syncope, and in heart disease accompanied by paroxysms of distress due to a weakening of its action, would either be *nil*, or else it would even aggravate the symptoms.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By RINGROSE ATKINS, M.A., M.D., Medical Superintendent,
District Lunatic Asylum, Waterford.

[Concluded from page 239.]

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

The Tendon Reflex in the Insane.—The physiological and clinical importance which, since the researches of Westphal and Erb, the study of the tendon reflex has acquired in cerebro-spinal affections, has induced Dr. Sepilti to make on the insane patients in the asylum at Reggio Emilia a series of inquiries on the presence and degree of this phenomena. The paper, of which the following are the principal conclusions, was read before the Congress of the Italian Phreniatric Society, and subsequently published in the *Revista Sperimentale* :—

1. Tendon reflex presents different grades of intensity in the various forms of mental diseases, as well as different facility in its production.

2. The reflex of the knee was established more frequently than that of the foot, and in both it may be wanting without the existence, at the same time, of the phenomena of *tabes dorsalis*.

3. The rotular reflex appeared distinctly more frequently in states of over-excitement than in those of depression and mental enfeeblement, whether acquired or congenital.

4. In hemiplegias of cerebral origin of remote date, it was exaggerated to such a degree as to produce clonic spasms of the foot, and sometimes of the knee also, which may be observed occasionally some hours after the inception of hemiplegia. Forced flexion of the great toe does not arrest the spasm of the foot.

5. In the degeneration of the posterior columns of the cord extending to the lumbar enlargement there is complete abolition of the reflex of the knee and foot.

6. The tendon reflex enters into the class of spinal reflex, and is probably effected through the excito-motor arc differently from the course through which cutaneous reflex activity is induced.—(*Alienist and Neurologist.*)

The Genesis of Hallucinations.—Prof. Tamburini discusses this subject at some length in the *Revista Sperimentale*, and concludes as follows:—

1. Hallucinations necessarily have their seat in the sensory cortical centres, where the impressions received from the organs of the senses are perceived.

2. Hallucinations consist of a morbid excitement of the sensory centres of the cortex, analogous to that which, occurring in a motor centre, may produce cortical epilepsy—the one has abnormal sensation, and the other abnormal motion, for its results.

3. This morbid irritation may arise spontaneously, or it may be due to irritation in the peripheral organs of the senses in the conducting nerves, in the sensory ganglia at the base, or in the white medullary fibres; it may also be due to morbid activity commencing in the centres of ideation. In the first case the origin of hallucinations is central; in the second, either peripheral or in the conducting media; in the third it is intellectual; but in every case the sensory centre plays a most important part, for if it be unaffected no real hallucination can exist.

4. An illusion is merely an hallucination, in which the morbid excitement of the sensory centre is due to a real impression received from without. This nervous impression, however, acting upon a nervous centre in a state of abnormal irritability, becomes transformed by it into a sensation other than the true one.—(*London Med. Record.*)

The Pathological Anatomy of Hallucinations.—Luys (*Gaz. des Hôpitaux*, 1880, No. 142) states that, as the result of many years of study of the brains of subjects of hallucinations and illusions, he has discovered certain interesting peculiarities in the cortex and optic thalami. Those in the former location are of two kinds—localised hypertrophy, and atrophic conditions more or less marked. The meninges are found somewhat congested, but the adhesions met with in general paralysis are lacking. In the cortex itself the characteristic lesion is a prominence of the paracentral lobule when viewed on the internal face of the hemisphere. In the normal brain the curve of the superior edge of the hemisphere is regular, but in these cases it becomes even gibbous in the

isolated cortical region. On incision it is seen that the cerebral substance is increased, and the folds more developed. On the convex face of the hemisphere it is seen that the two marginal convolutions are also swollen and more sinuous. This peculiarity may appear on one or on both cerebral hemispheres, but it most frequently shows itself on one only. It is more likely, M. Luys thinks, to be double in old cases.

This peculiarity in this particular region in the brains of certain lunatics had been already noticed by Parchappe (*Traité de Folie*, p. 147), but had not been associated with these special symptoms during life. The atrophic alterations claimed by Luys to be associated with hallucinations are most noticeable in the first frontal convolution, which is diminished in size, and the fissures enlarged and patent. The second frontal also shares frequently in the change, and the Rolandic sulcus and the parieto-occipital are widened and gaping. Sometimes the calloso-marginal fissure is notably atrophied. Microscopical examination reveals the superior cortical layers greyish, gelatinous, and infiltrated with serum—the deeper ones often reddened, and with strongly-injected and abundant vessels. The nerve-cells are scattered, and those that are seen are covered with yellowish granulations, or in a more or less advanced condition of degeneration. The optic thalami in subjects of chronic hallucinations exhibit certain degenerations that indicate that marked circulatory disturbances have occurred. Sometimes these changes are minute hæmorrhagic foci in various phases of absorption, showing themselves in minute brownish or wine-coloured spots; or, again, there are areolar cavities disseminated through the nuclei, constituting foci of softening connected with atheromatous degeneration of the walls of the capillaries.

A special form of chronic alteration sometimes met with in these cases is sclerosis degeneration. In some cases the thalami are found pale, and almost exsanguined, and on section the blood-vessels are seen gaping, as if there existed a veritable interstitial sclerosis. Microscopic examination reveals sclerosis, which, starting in a morbid thickening of the ependyma, insinuates itself into the central mass in the form of perivascular trabeculæ, and finishes by invading the different nuclei, and crowding out the nervous elements. This interstitial sclerosis is accompanied by partial hyperæmias and a large proportion of amyloid corpuscles. Its tissue is formed by a very fine reticulum, very compact, and forming a homogeneous mass. This invading neoplasm produces all

the usual disturbances of nutrition in all the active nervous elements. The nerve-cells become more or less scattered, so that in some parts they are met with only in clusters here and there. Those that do remain are generally granular, attenuated, and in various stages of degeneration. In the acute forms of the hallucinatory process, and in cases that succumb during the period of excitation, we find a very intense vascularisation in the central portions of the nuclei, and particularly in the grey substance of the third ventricle. Occasionally in the external regions of the optic thalami, where the fibres of the corona radiata of Reil are lost in the substance of the ganglion, the nerve-cells are found notably increased in volume, and, consequently, apparently in a condition of functional super-activity.

In a certain number of hypochondriacs who have had during life either illusions or hallucinations of the visceral sensibility, M. Luys has observed that the networks of the grey central substance which represent the localities of transmissions of impressions irradiated from the visceral periphery were the seat of patches of hyperæmia of diffuse reddened spots, which indicate the persistent traces of foci of hyperæmia neatly localised. In these cases the walls of the third ventricle were more or less rose-tinted, and exhibited scattered, discrete, vascular striations, and here and there patches of very intense hyperæmia. In the above pathological findings we have, as M. Luys points out, evidences of chronic hyperæmia, traces of old congestions in the central grey matter of the optic thalami and third ventricle, and also similar traces of hyperæmia, with concomitant degeneration in various portions of the cortex. These two centres of cerebral activity are found associated in their morbid conditions as in their functions. In the physiological conditions it is the cells of the nuclei of the optic thalami that transmit to the various cortical regions the impressions that pass by their networks. In pathological conditions the same cellular elements enter *motu proprio* into action under the influence of local excitation or persistence of certain vibrations and of special circulatory troubles, and transmit to the cortex incitations created in themselves, and having no connexion whatever with the external world. These fictitious incitations are then dispersed over the receptive tracts of the cortex, and produce in the sensorium their special sensorial disorders and appropriate emotional states. Hence the various concepts of the subjects of hallucinations and their obstinate abnormal emotive conditions.

The hallucinatory stimulus is always in its beginning sensorial in its nature, according to the special set of cells in which it takes rise, whether auditory, visual, gustatory, &c. But, like all similar normal stimulations destined to lose themselves in the sensorium, it is natural for this to diffuse and implant itself there, and in the centre of psychic activity it gradually loses its primary sensorial character, and takes on a different form of existence, losing all apparent traces of its origin. What was first a simple morbid excitation of the sensory cells in the thalamus is, according to this theory of M. Luys, transmitted to the cortex, where it elaborates itself into complete psychic conceptions. The unilateral character of the changes observed is noteworthy, and may possibly help to explain, M. Luys thinks, certain unilateral hallucinations, and the co-existence of hallucinations with perfect sanity.

As to the ætiology of hallucinations, it will be readily seen from the above that, according to M. Luys' views, lively impressions, which, made upon the senses, leave their impress, may be revived through morbid irritations of the portions of the brain involved by anything for example that can disturb sufficiently their circulation, such as cerebral congestion from any cause, certain drugs, &c.—(*Am. Journal of Nervous and Mental Disease.*)

Morbid Alterations in the Structure of the Cerebral Capillaries.—Dr. Theodore Deecke, in Part IV. of his able papers on "The Structure of the Vessels of the Nervous Centres in Health and their Changes in Disease" (reprinted from *The American Journal of Insanity*), states that he at least has never as yet examined one adult brain either from persons who died accidentally in apparent health or from persons who had suffered from brain disease which did not contain in some convolitional region or the other more or less marked evidences of gross alteration in the capillary system. These were represented by the presence of the remnants of capillary vessels which at one time or another by causes unknown must have been cut off from the general circulation. They are found preserved embedded in the cerebral tissue, forming rigid shrubs of larger diameter than the living normal capillary, with thickened longitudinally striated walls. At the one end they commonly show a kind of knobby dilatation which at one point runs out into a long filament, probably the collapsed sheath of the unaltered portion of a capillary vessel. Frequently, but not always, they exhibit a slightly glassy appearance, and offer a great resisting power to the influence of acids and alkalies, as well as to

ether, chloroform, and alcohol. They are of a cartilaginous consistence, and he has never observed any alteration of tissue in their immediate surroundings. Aside from a little granular material occasionally met with in the tubes, they seem to be filled with a uniform, slightly refracting substance, and the only theory in regard to their origin which he can suggest is that they are, as indicated above, the remnants of occluded, dilated, and finally degenerated capillary vessels, which have become infiltrated with an inorganic compound in combination with an albuminoid which is indifferent to the chemical processes occurring in those parts of the living organism.

It remains to state that the principal seat of this alteration of the capillaries is the grey cortex of the cerebrum; next to this they are occasionally met with in the central grey ganglia and in the pia mater. In the white layer in the pons Varolii, the medulla oblongata, and the spinal cord they must be exceedingly rare, if they ever occur. By this of course he does not mean the occlusion of capillaries *per se*, but the peculiar processes which follow the occlusion, and which lead to the formation above described. In over three hundred examinations of the portions of the brain mentioned and in twenty-one of the cord he has never met with a single case.

This is the first material and permanent change in the vascular system of the nervous centres to which Dr. Deecke calls attention. Although in its origin standing at the border of physiological and pathological conditions, it presents in its results a true pathological character. In proportion to the extent to which the lesion is found in any given case it should be taken into consideration, as it is at all times an evidence of disturbance in the capillary circulation which is of significance in an ætiological point of view. To this condition of the capillaries the author proposes to apply the term *callous* degeneration of the capillaries, and in a subsequent article records the morbid appearances found in two cases in which this lesion was concomitant with extensive capillary embolisms. These cases were essentially instances of acute delirium, strongly simulating mania, which rapidly proved fatal, and along with the capillary embolisms were found numerous cells or bodies existing in large numbers in the parts affected, varying in size, and reaching the one five hundredth of an inch in diameter. They were globular, round, elliptic, or oval smooth bodies, perfectly transparent, yet slightly refracting light. Were it not for this latter

property they would be easily mistaken for hollow spaces. Inside these bodies there is at all times found enclosed, like the nucleus in a cell, a white cell or corpuscle. In fresh specimens which have not been hardened, neither the substance of these bodies nor the white corpuscle within them will absorb carmine, and they are thus distinguished from the nuclei of the neuroglia, the ganglion cells, and the lymphoid cells, which all become marked by taking up the staining fluid. Dr. Deecke considers that these peculiar bodies are migrated white corpuscles surrounded by a gelatinous protoplasmic substance, and that the whole represents a new formation as the product of an inflammatory process. If fresh sections containing these bodies be submitted to the action of iodine the central corpuscle will be darkly coloured, while the enveloping protoplasmic material will assume a light yellow hue.

Folie à deux.—The interesting subject of insanity passed on from one individual to another, as it were by direct personal influence or contagion, forms the basis of an article by M. Marandon de Montazel in the *Annales Méd. Psychol.* for Jan., 1881. The points involved had received previous notice, articles appearing from the pens of MM. Lasegue, Falret, and E. Regis. M. de Montazel recognises the forms of the affection described by these authors, and brings forward a third variety in which insanity becomes developed by contagion in predisposed persons. The conclusions arrived at may be summed up as follows:—

I. *Folie à deux* includes three distinct varieties:

1. *Folie imposée*, in which one insane person imposes his delusions upon another more feeble morally and intellectually than himself.

2. *Folie simultanée*, in which two hereditarily predisposed individuals contract simultaneously the same type of insanity.

3. *Folie communiquée*, in which an insane person communicates his delusions and hallucinations to another individual hereditarily predisposed to insanity.

II. It seems necessary for three indispensable conditions to simultaneously combine to produce the *folie communiquée*:

1. A well-marked hereditary predisposition in the recipient or passive party to whom the disorder is communicated.

2. In every case as intimate an association as possible between the two persons who will share the insanity.

3. Incessant action on the part of the insane person upon the mentally sound person to cause him to adopt his delusions and hallucinations.

III. In a medico-legal point of view the passive individual in the *folie imposée* is more or less weak-minded or imbecile, and even when he cooperates in the insane acts of the other active party he need not be considered as an insane person in the strict sense of the term. On the other hand, in the *folie simultanée* and the *folie communiquée* both parties must be considered insane.

IV. In a medico-legal point of view, in the *folie imposée* the appearance of insanity is a relative matter, and the expert in order to draw a conclusion in regard to it should study to inform himself in respect to the previous mental state of the passive-receiving individual.

V. *Folie simultanée* and *folie communiquée* are only two particular instances of the general influence of surroundings on the forms taken on by mental alienation.

VI. It is also by the general influence of the environment that we have to explain the fact that all the cases of *folie à deux* are delusions of persecution—it is the type of the nineteenth century.

This last proposition needs the explanation that it applies more directly to the *folie simultanée* in which M. Regis made the observation that all the cases were of this character, but it is doubtful if this generalisation will hold.

IV. NEURO-THERAPEUTICS.

Nerve-stretching in Locomotor Ataxy.—The operation of nerve-stretching as a remedial measure for the relief of neuralgias affecting various nerves is of comparatively recent introduction. It was originated accidentally by Billroth, who cut down upon the sciatic nerve expecting to find a tumour, but found nothing but normal nerve-tissue. By this procedure, however, the neuralgia was relieved. Subsequently von Nussbaum, of Munich, acting on the result thus obtained, was the first to perform nerve-stretching as a premeditated operation. Since then, owing to the unexpected success which was obtained in the cases so treated, and in view of the facts that but little danger to the patient's life accrues therefrom, and the normal functions of the nerve stretched is in no way impaired, the procedure has been very frequently carried out in different parts of the world with very beneficial results.

As yet the *rationale* of this method of treatment is very obscure, the records of patho-physiological experiment in this direction being scanty. From a merely clinical point of view the different nervous diseases in which nerve-stretching has been applied, accord-

ing to Drs. Flinger and Lee (*Am. Journal of Nerv. and Ment. Dis.*), are as follows :—

I. Neuralgic Anomalies—

1. Sciatica, { *a.* Rheumatic, idiopathic or primary.
 b. Symptomatic or secondary.
2. Prosopalgia, Neuralgia of the fifth pair.
3. Intercostal neuralgia.
4. Idiopathic neuralgias of other nerves.
5. Neuralgias of the peripheral nerves caused by surgical lesions involving the nerve trunks.

II. Spastic Anomalies—

1. Mimic spasm, spasms of the seventh pair.
2. Spasms of the accessory nerve of Willis.
3. Spastic contractions of the nerves of the extremities.

III. Epilepsy.

IV. Paralysis.

V. Tetanus.

VI. Locomotor Ataxy.

VII. Anæsthetic Leprosy.



As regards its employment in *locomotor ataxy* it was the electric pains, which so frequently in certain stages of this disease produce such excruciating agony to the sufferer, that suggested to Dr. Carl Langenbuch, of Berlin, the idea of stretching the sciatic nerves. The unexpected effect of the operation—namely, that not only was the pain relieved, but also that the symptoms of incoördination disappeared, attracted well-merited attention, as all the remedies hitherto employed had been valueless, and failed to exert any influence whatever on the course of the disease. Since Langenbuch's first operation on September 13, 1879, some ten or twelve cases have been recorded, with varying results; but, on the whole, benefit has been derived, both as regards the relief of the pain and the diminution or disappearance of the ataxic symptoms. Amongst the cases recorded during the last six months are the following :— One in the service of M. Charcot, which M. D'Olier states (*Le Progrès Médical*, No. 52) was, a month after the operation, free from pain; the gastric crises had disappeared, and the motor incoördination also had nearly entirely disappeared from both sides. Another case, under the care of M. Debove, had been operated upon by M. Gillette; the median and musculo-cutaneous nerves of the right arm were those stretched. Since the operation the pains have

diminished in the right arm, and disappeared in the left arm and lower limbs. The plantar anæsthesia has much diminished in the left side; the motor incoördination is much improved; walking has become possible without support. The patient has regained regular sleep, and refuses morphia, as his pains "are nothing to what they were." A case is recorded by Esmarch, of Kiel, in which the nerves in the axilla were stretched, the operation being followed by very satisfactory results—not only the pain in the upper extremities, but also the pain in the lower extremities, as well as the other symptoms of ataxia, ceased. One, operated on by Erlenmeyer, was attended by wholly negative results, but the failure was probably due to insufficient stretching of the nerves. Flinger and Lee, of Chicago, report a case in which the paroxysms of pain were relieved, but no change took place in the ataxic symptoms; death, however, shortly supervened from bedsores and pyæmia. On the 5th of February last Mr. Marshall, at University College Hospital, stretched the great sciatic nerve in a case of the disease under the care of Dr. Bastian; the nerve was cleared sufficiently to be able to grasp it between the finger and thumb, and then traction was made, at first upon the lower, then upon the upper end. The result of this case has not, so far as I am aware, been published. On Monday, March 7, Mr. Stokes, at the Richmond Hospital, stretched the left sciatic nerve in a well-marked case of the malady of five years' standing. The result has not yet been communicated. This was the first occasion in which the procedure was carried out in Ireland. From a short leader in *Le Progrès Médical* it would appear that M. Debove has had two more patients suffering from locomotor ataxy operated on, the results being yet unknown. Dr. Brown-Séquard has found in his experiments on guinea pigs rendered hemianæsthetic by partial section of the cord, that stretching the sciatic was followed by the production of a hyperæsthetic condition of the previously anæsthetic limb, and that this hyperæsthesia was by no means necessarily confined to the area supplied by the nerve operated upon, but might affect all the limbs in the body. At the Société de Biologie, on the 22nd of January last, he even said that the result of nerve-stretching in locomotor ataxy might have been seen from his experiments.

The Use of the Magnet in Paralysis.—Nothnagel, in *Virchow's Archives*, May, 1880, relates the case of a recurring paralysis in the right hand of a man paralysed in the same member six years

previously by a stroke of lightning, from which he had once recovered and remained well six years. Three months after the occurrence of the second stroke, Nothnagel, after failing with other therapeutic measures, brought back sensation and motion in three-quarters of an hour by the application of the magnet, perfecting the mobility and sensibility in the part by subsequent applications, so that the recovery was complete in a few days, and the patient resumed work.

Dr. William A. Hammond, in the *N. Y. Med. Jour.* for Nov. last, cites "two cases of chorea which were completely cured in a few minutes; also one of speechless hemiplegia, which entirely recovered so far as Dr. Hammond could perceive, but had another attack in a few days, and died comatose; and an aphasic and hemiplegic patient in whom sensibility was restored," though no further improvement followed the employment of the magnet.—(*Alienist and Neurologist*).

The Galvanic Bath in the Treatment of Tremor.—At the Session of the medical section of the French Association for the Advancement of Science (reported in *Le Progrès Médical*, August 11), M. Constantin Paul gave an account of his experience with the galvanic bath in the treatment of various forms of tremor in which the use of ordinary induction or galvanic currents had failed. His apparatus was essentially a water bath traversed by an extra current in an ascending direction. The application could be graduated at will, and was given for half an hour every other day. In mercurial tremor its success was constant; alcoholic tremor, cure; chorea, one case successful, one unsuccessful; multiple sclerosis, almost constant amelioration; paralysis agitans, amelioration; tremor, in a case of incomplete paraplegia, cured; tremor from spinal irritations, success almost constant; locomotor ataxia, failure. He proposed to continue his therapeutic experiments, but deemed he had sufficient data already to recommend the use of this therapeutic method.—(*Am. Jour. of Nerv. and Ment. Dis.*)

Dr. C. Reinhard on Hyoscyamia.—Dr. Reinhard, of the Dalldorf Asylum, Germany, sums up his views on the use and effect of hyoscyamia as follows:—

1. Hyoscyamia has a calmative effect in many cases of mania and shortens their duration. It seems to act most favourably in states of excitement which occur synchronously with the catamenia.
2. It sometimes acts favourably in epilepsy, in so far as it diminishes the number and intensity of the seizures.

3. The state of the pulse seems to be one of the conditions of favourable operation; it must be contracted and tense.

4. Contra-indications are diseases of the arteries, heart, and lungs. On account of its effect on the heart and nutrition, it ought never to be used for a long period of time consecutively. The main danger lies in paralysis of the heart.

5. On the whole, to hyoscyamia as a therapeutic agent only moderate value can be ascribed.—(*Am. Jour. of Insanity.*)

RUPTURE OF THE PLANTARIS MUSCLE.

IN *The New York Medical Journal and Obstetrical Review* for July, 1881, Dr. A. B. Judson gives three cases in which he diagnosticated this injury. He remarks that it is seldom found described in systematic works on surgery, although its occurrence is probably not very uncommon. Its most remarkable feature is the trivial nature, or almost entire absence, of an immediate cause. Persons are attacked while quietly walking in the street, stopping suddenly under the impression that they have been shot in the leg. Apart from ecchymosis, which is met with in but a limited number of cases, the only objective signs are œdema and deep-seated induration, and these are by no means constant. If there is an obvious gap in the muscles, with an adjacent muscular tumour, the case is to be considered one of rupture of the muscles, the term *coup de fouet* being conveniently used to indicate those cases in which the exact lesion remains undetermined. The diagnosis depends on (1) the suddenness of the attack; (2) the insignificance of the apparent cause; (3) the location of the trouble; (4) the pain, which is absent or slight when the part is at rest, and produced or aggravated by those motions of the limb, active or passive, which disturb the muscles of the calf; and (5) the great disproportion between the objective and subjective symptoms. Recovery is always protracted and is probably not much facilitated by treatment, which, however, should not be neglected, for the prognosis is sometimes unfavourable, especially when the affected limb is the seat of deep varicose veins, or shows traces of former phlebitis. Local and general remedies should be directed toward the relief of pain. Repair of the injured structures should be promoted by preventing motion or disturbance of the part affected. The condition which seems best adapted to secure this object is that of enforced fixation with the knee moderately flexed and the ankle moderately extended. As recovery progresses, locomotion will be facilitated by a high-heeled shoe, which prevents the foot from being unduly flexed on the leg. Cases of this injury present opportunities for the exercise of judgment in the decision of the question of abandoning further rest and resorting to motion and exercise.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

Apoplexy; Death on the Thirteenth Day.—The PRESIDENT exhibited the brain of a man, aged sixty-five, who had died on the thirteenth day after a stroke of paralysis. The left lateral ventricle was completely filled with a black coagulum. The hæmorrhage had forced its way upwards through the roof of the ventricle to some height above the level of the corpus callosum. The left ventricle of the heart was hypertrophied; the organ, empty of coagula, weighed 16 ozs.; the kidneys were small—the right weighed 3 ozs., the left $2\frac{1}{2}$ ozs.; both were firm and hard to the feel, tough on section, and presented a diminution of the cortical layer and several cysts—in fact, though not obviously granular, they had all the macroscopic characters of cirrhotic kidneys. He was known to be subject to epistaxis, but was otherwise considered to be in good health, and had had no previous warnings or seizure. On the morning of the 7th February, while on his way to work as a market gardener, between five and six o'clock, he fell on the roadside, and a few hours afterwards was brought by the police to the Meath Hospital. At that time, 11 a.m., he was conscious, but unable to speak or make any articulate sound, and had right hemiplegia in a marked degree. He lived until the middle of the thirteenth day after the seizure—a length of time which he (Dr. Foot) thought unusual, as large extravasations of blood into the lateral ventricle are generally very rapidly fatal. During this time he was but once heard to speak, when he said the words, "Very well." He was conscious as he looked towards a person addressing him, and followed with his eyes the movements of those about him, and recognised his wife. There was an absence of the special symptoms

which are held to indicate grave forms of ventricular hæmorrhage; the pupils were not dilated, nor was there "conjugated deviation" of the eyes; there were no convulsions, nor were the paralysed limbs the seat of either spasms or rigidity; the pulse, temperature, and respiration varied very little from their normal condition; there was no yawning or involuntary movements of the affected side, nor did he get bedsores. However, he passed urine and fæces under him, and had some difficulty in swallowing. He had good use of the left arm and leg, as the hæmorrhage had not passed into the right ventricle, which merely contained a little blood-stained serum. Forty hours before his death he had a severe rigor which lasted fifteen minutes, and in which his bed shook. The brain, which weighed 50 ozs., had nothing remarkable on its surface; the basilar artery and its larger branches were atheromatous. The coagulum in the lateral ventricle was already acquiring a firmer consistency from absorption of its serum.—*February 26, 1881.*

Fibroma of the Finger.—DR. BENNETT said: This is a specimen which I have to show for Dr. M'Donnell, of the Dundalk Infirmary. He writes:—"It was a tumour which grew on the left forefinger of a female, aged thirty-four. It was removed this morning. It commenced two years ago, appearing like a small lump on the outside of the middle finger. It gradually enlarged and, three weeks ago, took on a rapid course. There is no history of injury of any kind. The patient was of weak intellect, but sound in constitution." Dr. M'Donnell removed the head of the metacarpal bone with the phalanges of the finger. The specimen is of considerable interest; for although the variety of digital tumour which it presents is well known and easily recognised, it is not of very common occurrence, and is likely, in its clinical characteristics, to be mistaken for the commoner form of digital tumour—enchondroma. Buried in the tumour is the extremity of the finger, with the phalanges and nail perfect. The tumour is lobulated and, so far as the general appearance goes, is like enchondroma of the finger, but differs from it in the ulceration of the two prominent lobes. We rarely see enchondroma ulcerated in this way, save when some mischance has occurred. Clinically the case differs from enchondroma in the rapidity with which the tumour developed. It dates from not more than two years ago, and of late its growth had been extremely rapid. Another point is, that this tumour appeared so late in the woman's life, whereas enchondromata of the fingers are generally traced to an early period, and are, perhaps, congenital. The tumour has a great deal of hardness and firmness, although it has been relaxed in these respects by my making a section through it. I made that section so as to implicate the line of the phalanges. The shade of colour it presents is not that of enchondroma. Although pale and bloodless it has not the pearly white or bluish shade of a cartilaginous tumour. In making the

section I endeavoured to divide the bones as fairly through their centres as I could. We are able to find the origin of the tumour distinctly. Here is the extensor tendon of the finger, and we can perfectly trace the origin of the tumour springing from the dorsal surface of the central phalanx. It is at the insertion of the extensor tendon, and is attached at the dorsal aspect, and also for some distance up the bone; but the most intimate point of attachment is where the tendon makes its closest connexion with the bone. It is a fibrous tumour involving the fibres of the tendon. The anterior lobe is absolutely disconnected from the sheaths of the tendons, and also from the bone. The structure of the tumour to the eye of anyone familiar with these growths is at once recognised to be fibroma; and, on a microscopical examination, I found it to present a double series of waving fibres, passing each other at right angles and in different directions. These sections have been treated with acetic acid, and the characteristic nuclei of the tissue are easily made out. No other elements are present, and the tumour is a pure and simple fibroma. It is of comparatively rare occurrence in this position, although such cases are recorded. A point of clinical interest is the comparative integrity of the bones embedded in the mass. As Virchow has pointed out, the most striking feature of tumours such as this, and that which distinguishes them from sarcoma, is, that while the growth springs from the bone and involves the surface of it, the mass of bone underneath retains its strength and firmness, and is in no way softened, absorbed, or carious. It has not even lost its symmetry, except just at the point of the springing of the tumour. The specimen is a typical example of the disease. I take it that there must have been little or no pain connected with it, for there is no mention of pain in the note.

Report of the Committee of Reference on Dr. M'Donnell's Digital Tumour, submitted by the Secretary.—"Sections made from portions of the tumour at its apparent origin from the bone presented the characters of a typical fibroma."—February 26, 1881.

Cirrhosis of the Kidneys; Pericarditis.—DR. HARVEY said: These specimens afford an example of a well-known sequence. The patient from whom they were taken was a woman, aged forty-seven, who was admitted into Cork-street Fever Hospital on the evening of Tuesday, 22nd Feb., in an almost dying condition. She was brought in the fever cab, and the resident had to exhibit stimulants in order to keep her alive. I saw her early next morning, and considered her near her end. She was extremely cyanosed, had rapid and distressed breathing, extremely rapid and very weak pulse, and, at the same time, somewhat excited cardiac action, but without any very definite impulse. She was so ill that I could not make any detailed examination of her. On placing the stethoscope over the heart I could hear very distinct pericardial friction sounds, and I thought I also

discovered a mitral systolic murmur. She was subsequently examined by Dr. J. W. Moore, who had no doubt whatever as to the existence of pericarditis, but was not sure as to the existence of a systolic murmur. She died a few hours afterwards. I made a *post mortem* yesterday. The body was very thin and emaciated. On opening the abdomen I found about a pint and a-half of dark fluid, which was quite clear near the pelvis, but in the neighbourhood of the left kidney had some flakes of lymph floating in it. The diaphragm was depressed, especially on the left side. On opening the thorax the right lung was seen to collapse fairly upwards; but, owing to a fenestrated adhesion between the margin of the lung and the pericardium, it was unable to collapse laterally. The left lung was almost entirely hid by a large pericardial tumour. In each of the pleural cavities there was about a pint of very dark fluid, which was evidently not inflammatory, for no traces of lymph were discoverable in either visceral or parietal pleura. There were a few shreds of fibrin floating in the cavities. The anterior aspect of the pericardium was œdematous. On cutting through this membrane the greatly-enlarged heart was seen to be the cause of the great size of the pericardial tumour. There was a small quantity (2-3 ounces) of a dark, turbid fluid in the cavity. Both visceral and parietal layers were brilliantly injected in a punctiform manner. In the region of the auricles and great vessels there was a thick coating of recent lymph. The enlargement of the heart appeared at first sight to be common to both right and left side, especially the ventricles. The transverse diameter of the anterior surface of the right ventricle is increased, but the cavity of that chamber does not seem to be increased, as the left ventricle bulges very abnormally into it. The walls of the left ventricle are greatly hypertrophied, and the cavity enlarged in both directions. The valvular orifices on the right side are normal. The mitral orifice is considerably dilated, and, I have no doubt, admitted of regurgitation during life. The aortic valves are healthy; the aorta is atheromatous; both lungs are fairly healthy, except for some marginal emphysema. The spleen is hard and its capsule thickened, and there were some old adhesions. Both kidneys present a good example of advanced cirrhosis. The liver also is cirrhotic. I presume that the chronic interstitial nephritis and cirrhosis of the liver were the antecedents to the cardiac disease. By increasing the peripheral resistance, and thus increasing the arterial tension, the hypertrophy of the left ventricle and the atheroma of the aorta were brought about, while, no doubt, the pericarditis was also due to the chronic renal disease.—*February 26, 1881.*

Cancer of the Liver after Amputation of the Breast.—The PRESIDENT exhibited the liver of a woman, forty years of age, whose left breast had been removed for “cancer” fifteen months previous to her death. The

liver was the only organ obviously affected by the recurrent disease, and it by no means presented an exaggerated example of its kind. It was far inferior in size and weight to many specimens of hepatic carcinoma exhibited to this Society, notably to that shown by Dr. Gordon, almost the largest on record, which weighed "rather more than twenty-four pounds" ("Proc. Path. Soc., Dubl.," N.S., Vol. III., p. 156). The gland in this case did not weigh more than 4 lbs. 14 oz.; it was bossed, especially on its inferior aspect, with cream-coloured protuberances, the layer of which presented the dish-like depression on their summits called the cancer navel. The lungs and pleuræ were completely free from any secondary cancerous formation, nor was there any effusion in either pleural cavity; the lungs were remarkable in two respects—the total absence of adhesions of any kind, and the completeness with which they collapsed. The scar which marked the situation of the left breast was tight and smooth, and was free from any nodules or button-like growths, nor were the peripheral lymphatic glands in its vicinity at all enlarged. Her final illness—that which probably was symptomatic of the secondary development of the hepatic cancer—commenced twelve months after the removal of the breast. It was characterised by dyspeptic symptoms, principally thirst, loss of appetite, and pain; neither ascites nor icterus was at any time present. After three months of a constantly increasing marasmus, with œdematous feet and legs, she died of exhaustion. The patient had originally been admitted to hospital under the care of Dr. J. W. Moore, at whose request Dr. Walter G. Smith examined a specimen of her urine for indigo, with a completely negative result. Its chromogenic capacity, indeed, was very feeble, for it was scarcely altered in colour even on boiling with HCl or HNO₃. It was free from albumen. It is estimated that cancer of the liver probably occupies the fourth place in the scale of relative frequency of carcinoma in all organs, those which have precedence of it being the uterus, stomach, and mammæ. Since cancer of the liver, in the great majority of cases, is *secondary*, following not only cancer of the stomach, but also carcinoma of the ovaries, uterus, and mammæ, it is evident why females are more subject to it than males. In this connexion he (Dr. Foot) would exhibit a drawing of a well-marked case of secondary cancer of the liver, which ensued upon cancer of the male breast. The disease in the breast had been removed, in the first instance, twenty-one years before the man's death, and a second time, on its recurrence in the same situation, nine years before his death. Its reappearance, for the third time, in the abdominal cavity proved fatal.—*March 5, 1881.*

Blood Coagula passed from the Kidney.—MR. ABRAHAM said: This is the case of a drover in India who received a severe blow in the side from the horn of a bullock. He was picked up in a collapsed condition,

and soon symptoms of severe injury of the kidneys presented themselves. He had severe renal colic; and after some days these brownish fragments passed with great difficulty through the urethra. From their form and appearance the native medical men considered that they were portions of the kidney itself that had been crushed and broken up into fragments. They are, however, merely blood clots, as the microscopic preparation demonstrates. The point of pathological interest is the great size of the pieces. One measured nearly two inches in length, and three quarters of an inch in breadth at its broadest diameter. It is interesting to see that the male urethra can be dilatable to such an extent as to allow such fragments to pass without surgical interference. For this specimen I am indebted to Surgeon-Major J. Ffrench-Mullen, of Rajpootan, India. The clots were not mistaken for worms.—*March 12, 1881.*

Disease of Femur.—DR. BOYD said: This is the leg of a girl aged twenty years which was amputated in St. Michael's Hospital, Kingstown, on last Tuesday. She was admitted for disease of the knee-joint. I proceeded to excise the knee, but found the femur so much diseased that I found it necessary to take off the limb at the thigh instead. The girl belonged to the agricultural class, and had always enjoyed good health; all the members of her family are healthy. Her father, mother, four sisters, and four brothers are all alive, and healthy. She stated that two years ago her knee swelled and became painful. There was no redness or other inflammatory appearance about it whatever, and she had received no injury, and could not account for its condition. The pain soon subsided with rest, but the joint continued stiff, and the swelling remained. The pain got worse, and at the end of a year she sought relief in the Infirmary of the county from whence she came. Up to that time, and for the first twelve months she had tolerable use of the leg—in fact, she said that walking gave her relief rather than otherwise, unless she ran, but that the pain returned on resting the limb. She was five weeks under treatment in the County Infirmary, and her knee was frequently blistered during that time; but it felt worse when she left the Infirmary than when she entered it, and for the last twelve months she has been unable to lean on the limb. Within the last six months the leg became much worse, and she suffered from starting at night, which often prevented her from sleeping. Whenever she had pain in the knee it was of a dull aching character, more in the neighbourhood of the joint than in either ends of the bone, and she was always worse at night. She was admitted into the hospital on the 21st of the present month, and seemed in perfect health otherwise; menstruation was quite regular, and her appetite tolerably good. The knee-joint was rather more oval than globular. The principal portion of the swelling seemed to be above and below the patella rather than at either side, but there was considerable

thickness about the condyles of the femur and above them, and she complained of soreness when pressure was made along the course of the bone. Seeing that the girl was so healthy I thought it better to detain her as short a time as possible in hospital, as I considered that her health was sufficiently good to stand an operation. I, therefore, put her under ether last Tuesday morning, and performed the operation bloodlessly with the aid of an Esmarch's bandage. On laying open the knee-joint I found the synovial membrane in a condition of pulpy degeneration. The articulating cartilage on the head of the tibia and that of the condyles of the femur were both removed by erosion. You see the condition of the articulating end of the femur. The cartilage is completely eroded from the articulating end of the tibia also. On cutting through the condyloid end I found that the saw sank very easily into the bone, and after I had removed the section I found small vascular points studded thickly all over the surface of the section, and that my finger penetrated quite easily into the bone at those parts. On making a second and a third section I found that the same appearances presented themselves, and seeing the bone so diseased there was nothing for it but amputation. I, therefore, continued the Esmarch's bandage higher up the thigh, and performed the amputation about the middle of the femur. The softened condition of the bone seems to be that of the first stage of caries in which there is fatty infiltration and transformation of the osseous cells—"la transformation graisseuse" of Ranvier. This condition of the bone is seen in the lower portion of the section next the condyles. Had the case gone on a little further there would have been suppuration in both the cancellous and the compact tissues of the bone. If the excision alone had been performed I consider that the caries would have gone on to such an extent that amputation would have been necessary in the end. I think the condition of the bone fully justified me in amputating. Had softening occurred in the condyles alone I would have put the leg up as well as I could with excision; but it extended so far up the bone that nothing but the operation I performed seemed sufficient under the circumstances. On microscopic examination Dr. Coppinger found the bone to be in the stage of fatty infiltration of the osseous cells, which is looked upon by Ranvier as the first stage of caries. He also found the condyle to be in the same state.—*March 12, 1881.*

Primary Carcinoma of Œsophagus.—The PRESIDENT exhibited a case of primary cancer of the lower third of the œsophagus. The disease almost surrounded the whole tube, in the form of a belt; the entire wall had attained a thickness of from one to two centimetres, and had become very rigid, and, from the projection of the ulcerating mucous surface inwards, the lumen of the tube was obliterated, so as to amount to a stricture of the passage. The disease extended vertically over an extent of

five centimetres of mucous membrane, and was abruptly defined by the elevation of the diseased surface above the unaffected surface. The surface of the zonular tumour was sloughing, of a dark greenish colour, very fetid, and with fragments of dead tissue lying loose upon it. Advanced beyond the main body of the disease were two outposts, in the form of sessile, button-shaped, wart-like masses; in elevation and sloughing aspect they were similar to the larger mass.^a For some distance upwards, about two inches, beyond the seat of the disease, the lining of the œsophagus was discoloured, of a slaty tint; beyond that the tube was normal in colour and structure. The disease did not encroach upon the cavity of the stomach; but the lymphatics over the immediate sub-phrenic or abdominal expansion of the œsophagus were diseased, and clusters of glands, like button-mushrooms, were crowded together. There were hereabouts in front adhesions to the back of the lobulus Spigelii, and behind to part of the pancreas and to the left supra-renal body. The cardiac end of the stomach was much congested from interference with the anastomosis between the coronary and œsophageal veins, and coated thickly with a very tenacious, reddish, glairy slime. There was no secondary infection of the liver, spleen, or any other organ. The liver was free from any sign of deposit externally; and it is well known that so large a part of hepatic cancer-growth is found at and involving the surface, that if it is not seen at the surface of a liver it is nearly certain not to be seen in section. The liver was light and soft—weight 2 lbs. 11½ ozs.—and the gall bladder was distended with dark-green, treacly bile—in fact, the liver presented the appearances noticed in starvation, of which he practically died, owing principally to the dysphagia.

It is now laid down by the best authorities, that of all tumours occurring in the œsophagus, as regards relative frequency as well as gravity of symptoms, carcinoma is by far the most important. It usually occurs in this situation as a primary disease, taking its origin in the œsophagus itself. The usual and, according to some of the best observers, the only form in which primary carcinoma appears in the œsophagus is the flat-celled or squamous epithelioma (cancroid). As regards its location, it may occur in any part of the tube; but if the œsophagus be divided into three parts of equal length, the great majority of cases will be found in the lowest third. It is possible that mechanical causes connected with the passage of the tube through the diaphragm may contribute to localise the disease at this particular place—the narrowest part of the œsophagus. A mechanical cause has been adduced in explanation of the frequency of carcinoma in the middle-third of the tube where, as is well known, the left bronchus crosses it, in the fact, that every morsel of considerable size, in passing down the œsophagus,

^a These smaller islands, quite distinct from the first mass, are probably to be regarded as secondary outgrowths derived from the original cancer.

squeezes its anterior wall against the posterior wall of the unyielding bronchus.

The man from whom the specimen was obtained was a pig butcher—an occupation frequently inductive of habits of intemperance, which are considered by all clinical observers to predispose to this disease. He gave his age as forty-four, but looked at least ten years older. He had the dirty-yellow cachectic appearance of the face common to cancer patients; a very foetid breath; was unable to swallow; emaciated rapidly, and had sharp lancinating pains in front and back. During the fortnight he was under observation he derived no benefit from treatment, and frequently produced a foetid sanious mucus rather by inverted peristalsis of the œsophagus than by vomiting, as the latter action was never complained of.—*March 12, 1881.*

Pleurogenic Pneumonia.—DR. DUFFEY said: Under the names of chronic pneumonia, interstitial pneumonia, fibroid phthisis, cirrhosis of the lung, sclerosis, induration, and scirrhous of the lung, fibroid degeneration, and fibroid substitution, &c., many varieties of the same generic form of chronic lung disease have been probably more or less confounded. To M. Charcot especially belongs the credit of attempting to classify and fix the distinctive characteristics of these different varieties of pneumonia described by authors under the above terms. In his "*Leçons professées à la Faculté de Médecine*"^a (1877 and 1878), he described three distinct forms of chronic pneumonia, which may succeed to acute inflammatory affections of the bronchi and of the pulmonary parenchyma, and are often confounded. The first form represents the chronic stage of acute pneumonia, having its principal seat and origin in the alveoli. He termed this chronic lobar pneumonia. The second and third forms are chronic broncho-pneumonia, and chronic pleurogenic pneumonia, succeeding to inflammation of the bronchial tubes or of the pleura respectively. These divisions are based on the primary seat and nature of the general lesion, all partial chronic pneumonias—such, for example, as are met with around tubercular deposits in the lung, apoplectic nodules, and cancerous or other tumours of the lung—being excluded. The first form, or chronic lobar pneumonia, is the result of the persistence of the pneumonic exudations in the alveoli—resolution being either slow, or frequent relapses of the acute disease occurring. The peculiar character of this form is the absence of dilatation of the bronchial tubes. The second form is always secondary to broncho-pneumonia, and was illustrated by a specimen presented by our President at an earlier meeting of the Society this session. The great characteristic of this form is the dilatation of the tubes. As the President gave a full account of the views of Wilson Fox and others as to its pathology in connexion with the specimen he exhibited, it is not

^a Résumées par M. Babzer. Rev. Mens. de Méd. et de Chir., 1878. P. 776.

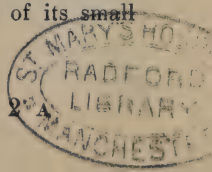
necessary for me to say anything further as to this form. The specimen on the table is, I believe, an example of the third form, or the pleurogenic pneumonia of Charcot. It was removed from the body of a man, fifty-seven years of age, who was admitted into Mercer's Hospital on the 29th of December, with anasarca of the lower extremities, of eight weeks' standing, and chronic cough. He sought admission for the anasarca, and did not complain much of the cough, as he had had it for several years, especially in the winter. His previous health was otherwise good, and he had never before been in hospital. He was a spirit-drinker, but not an habitual drunkard. There were bronchitic râles heard generally over his chest, and a clear sound was given on percussion, even over the cardiac region, though there were evident signs of dilatation of the right ventricle. There was some slight ascites, and considerable solid œdema of the lower extremities. There was forcible cardiac impulse at the epigastrium, but no apex beat of the heart was visible. The cardiac sounds were distant and feeble; pulse strong and full; no jugular pulsation existed. The expectoration was muco-purulent, never excessive or fœtid, and at no time of a sanguineous character. His cough was more or less paroxysmal. For several days he would not complain of it, and on other days it would be quite distressing. His dyspnœa was also paroxysmal. His urine was scanty, albuminous, and loaded with urates. He had also hæmorrhoids, and a fissure of the rectum, which was operated on successfully in the surgical ward. He improved in health, and went to the Convalescent Home, but in a fortnight subsequently returned to the hospital, complaining of difficulty of breathing. He said he was "all right only for his breathing." He got gradually weaker, and sank. During the week before his death he kept his bed, but did not complain of pain. His urine diminished very much in quantity, and on the morning of his death he was slightly delirious. This is referred to, because in a somewhat similar case reported by Dr. Gerald Yeo,^a death was ascribed to uræmic toxæmia; in this case, however, it was probably caused by asthenia. The *post mortem* examination was made twelve hours after death. The right lung was so firmly adherent that it had to be almost cut out of the chest. There is emphysema of the middle lobe and of the margins of the lower lobe. The lobes are connected by firm adhesions, which form an almost complete fibrous envelope of the lung, which is not materially reduced in size. On section the lung is of a slate colour, intersected by numerous white fibrous laminæ or bands, which extend in from the thickened pleura in all directions, and permeate a considerable portion of both the upper and the lower lobes—more markedly so in the latter than the former. The section gave to the knife a grating feel, and a rough, cartilaginous sensation to the finger. No fluid could be squeezed out of the lung, which was univer-

^a Irish Hospital Gazette, Jan. 15, 1873. P. 21.

sally firm, tough, dense, and non-crepitant. The arteries and bronchial tubes also cut quite roughly, and stand out prominently where divided. The smaller branches of the pulmonary arteries seem distended. In one of them there is a small clot, but the vessel occluded does not seem to lead to any infarction or obliteration of that part of the lung. There are spots of atheroma in some portions of the pulmonary artery and its branches. The bronchial tubes on section seem to be somewhat dilated, but not markedly so, and their mucous membrane is thickened and congested, the parallel striæ being well marked. The majority of the bronchial tubes are empty, but some of them contain a small quantity of sero-muco-purulent fluid. The bronchial glands are extremely indurated and deeply pigmented. At the apex there are a few more or less distended alveoli. In several places, especially as seen with a lens, the connective tissue dips down from the pleura through the lungs. The left lung was comparatively healthy—so much so that it was not thought necessary to remove it. It was, however, emphysematous. The case bears out the remark of Jürgensen,^a that the disease is generally confined to one lung, and statistics show that the lung most frequently affected is the left one. The heart is very large; it was exactly the same weight as that which Dr. Hayden has recorded as the largest he has seen—namely, $32\frac{1}{2}$ ounces, empty of clots. Instances of much larger hypertrophied hearts are, however, recorded. Dr. Hayden mentions that Dr. Stokes met with a heart of 66 ounces, and he has in his possession a heart obtained from a patient of his colleague, Dr. John Hughes, which weighed 44 ounces.^b There is a large fibrous deposit on the surface of the heart. The right auricle is considerably dilated; its walls are thinned, and present, in some places, to the naked eye the appearance of being the seat of fatty degeneration. The right ventricle is enormously dilated. There is not as much hypertrophy of the cardiac walls as might be expected from the weight of the heart; in some places the wall of the right ventricle is not much above the normal thickness, or two and a half lines. The left ventricle is also enormously dilated, but its walls are not excessively increased in size. The lining membrane of the ventricle bears no sign of endocarditis, and the auriculo-ventricular orifice is not dilated. There was no murmur during life. The aortic valves are competent, although thickened by atheromatous deposit, especially at their attached margins; but they are otherwise not affected. There is extreme atheroma of the aorta. At one place it has gone on to the formation of a small atheromatous abscess, which, if the man had lived longer, would probably have resulted in the formation of an aneurism. One interesting point in connexion with the condition of the right ventricle is the occurrence of well-marked atheroma of the pulmonary artery, and of some of its small

^a Ziemssen's *Cyclop.* Vol. IX., p. 870.

^b *Diseases of the Heart and the Aorta.* P. 467.



branches. There is no doubt as to the existence of a considerable amount of atheroma in this vessel, and the tissue of the artery is not as elastic as it should be. On opening the abdomen some slight peritoneal adhesions were found, but very little ascites. The kidneys together weighed $18\frac{1}{2}$ ounces. The capsules were smooth, and their appearance to the naked eye was more that of coarse congestion than of any special form of disease. The spleen is the seat of chronic hyperæmia, being deeply congested and contracted. There is evidence of perisplenitis in the capsule, and there is a large calcareous concretion near the hilum. The liver presents the well-known nutmeggy appearance of chronic hyperæmia. There was a slight adhesion at its capsule.

According to Charcot chronic interlobular pneumonia — developed consecutively to pleuritis through the lymphatics—may be designated pleurogenic. Wilson Fox speaks of cirrhosis of the lungs as being consecutive to pleurisy. He says:^a—“That thickenings of the interlobular septa may at times extend inwards into the lung, as a consequence of chronic pleuritis, is an undoubted fact; but more proof is at present required, he thinks, than has been afforded, that these can implicate the walls of the pulmonary alveoli to such an extent as to produce a general induration of the lung, with obliteration of the air vesicles, independently of a superadded pneumonic process, or of the coexistence of tuberculosis.” At the time he wrote (1871) he was acquainted with only two recorded cases which would appear to bear out such an opinion. Thickenings have been likewise found in the coats of the pulmonary artery both by Dr. Schmidt and by Dr. A. Clark in similar cases, and also coagulations in branches of the pulmonary artery, as in the case brought forward. The resemblance which the pulmonary artery bore to the aorta, in consequence of the atheromatous change in it, has been before remarked. And the connexion between hypertrophy of the right ventricle with dilatation, and atheroma of the pulmonary artery, was referred to by Professor Gerald Yeo in a case in point, which he brought before this Society ten or eleven years ago. Dr. Yeo formulates this connexion so concisely that I may be permitted to quote what he says:^b—“There is permanent over-distension of the pulmonary artery. This continued irritation of its walls excited the chronic endarteritis deformans which destroyed the elasticity of the vessel, and thus increased the work to be done by the right ventricle. This increase of work is followed by hypertrophy, just as occurs on the left side of the heart when a similar condition exists in the aorta.” Walshe^c also speaks of the association occasionally observed of calcification of the pulmonary artery, with dilated hypertrophy of the right ventricle (each of them so rare), as seeming to

^a Reynolds' System. Vol. III., p. 772.

^b Trans. Path. Soc. Dub. Vol. V., Part 2, p. 125.

^c Diseases of the Heart. 4th Ed., p. 281.

exhibit a relationship of causality. And Dr. Hayden has likewise pointed out the effects which continued engorgement and tension of the pulmonary vessels have in causing irritation of the right ventricle leading to its subsequent dilatation, and thus causing an effect on the right side of the heart similar to what occurs in the left side.

As to the course of events which took place in the case, it appears to me that the 1st step was probably broncho-pneumonia; 2nd, pleurisy; 3rd, extension of the inflammatory process from pleura through the lymphatics, with infiltration of lung by interlobular partitions constituted by embryonic connective tissue; 4th, emphysema; 5th, dilatation and hypertrophy of the heart, with atheroma of the aorta and pulmonary artery; 6th, continued congestion of the liver, spleen, and kidneys, with probable increase of their connective tissues; and, finally, death, the result of cardiac insufficiency. Mr. Phin. S. Abraham, F.R.C.S.I., has kindly favoured me with the following note of his examination of the specimen, which is preserved in the Museum of the Royal College of Surgeons in Ireland:—"In the part most affected there is much consolidation of the whole substance of the lung. The pleura is thickened, and fibrous septa seem to extend from it, in an irregular manner, into the lung tissue. Some of the branches of the pulmonary artery appear to be somewhat distended, and at one point one or two spots of atheroma are apparent. The branch in which this was seen was occluded at one point by a sanguineous coagulum. On section of the lung substance the cut ends of the larger air-tubes stand out from the surface; their walls are evidently thickened, and apparently strengthened by a superabundant growth of their cartilaginous elements. Under the microscope this excessive formation of cartilage is more apparent. While the innermost parts of the cartilaginous fragments are of the hyaline variety, although of cellular type, and with comparatively little matrix, the outer layer, formed of smaller cells, many of them multinucleated, is rather of the fibrous type, having distinct fibrils between and around the cells in the matrix. In places there seems to be no distinct demarcation between the cartilage and surrounding fibrous tissue—the former, as it were, being formed out of the latter; and in this neighbourhood there is abundant inflammatory small-celled infiltration. The heart in the same case showed evidence of fatty degeneration, particularly in the right auricle; and microscopic examination of the kidneys gave proof of parenchymatous inflammation."

DR. HAYDEN.—As to the pathology of cirrhosis of the lung, now called fibroid phthisis, I am inclined to think that the classification of Charcot is eminently convenient; but I venture with great respect to differ from his views, as expressed by Dr. Duffey, as to the mode in which the thickening of the fibrous tissue proceeds from the pleura to the centre. I would remind the Society that there is direct continuity of structure

between the subserous envelope of the lung and the septal tissues of the lung. The bands which pass through the lung from the bronchial tubes to the surface are connected with the fibrous envelope. This was very long ago clearly and satisfactorily demonstrated by Dr. Stokes. Therefore, I think there is no necessity to have recourse to the assumption of lymphatic connexion to account for the procedure of the disease from the circumference to the centre. The late Sir Dominic Corrigan, in an admirable article, dwelt on the great probability of mistake being made in cases of this kind by confounding cavities of the lung with the ordinary dilatation of the bronchial tubes, which follows in chronic cases of this kind. A word as to the condition of the heart. I am not sure that we can account for it on Dr. Duffey's assumption that the primary disease was located in the lungs. I am satisfied that the history of the man's illness must be considerably antedated. I am inclined to think that the hypertrophy of the heart was of many years' duration; that that hypertrophy was followed by disease of the lungs; and that the old enlarged heart underwent progress under the strain to which it was subjected at the time of the occurrence of disease of the lungs. I distinctly remember Dr. Gerald Yeo's communication to the Society in reference to atheroma of the pulmonary artery—a condition very seldom met with. My only difficulty in reference to his view of the pathology of atheroma is that dilatation of the right side of the heart is of very frequent occurrence, and leads to a condition of the lung entailing a great strain on the right ventricle of the heart, and dilatation of the pulmonary artery. I can hardly suppose that the disease of the kidneys—for I believe that there was disease of the kidneys, and structural disease too—was in existence sufficiently long to account for hypertrophy of the heart. We know that chronic disease of the kidneys is a common cause of hypertrophy of the heart. These conditions suggest the necessity for an examination of the urine with a view to the detection of albuminuria. The state of the kidneys does not bear out Dr. Duffey's view either. I cannot suppose that the atheromatous condition of the aorta, advanced as it is, is sufficient to account for the hypertrophy of the heart. I do not know whether there was anything in the man's habits as regards labour to account for it. A heart of such magnitude, in the absence of valvular disease, is exceedingly rare, even where there is advanced disease of the kidneys.

DR. DUFFEY.—The only physical signs that I could satisfy myself of were those of chronic bronchitis and emphysema—in other words, there were râles of varying extent audible through the chest, feeble inspiration, and prolonged expiration, particularly over the anterior portion of the chest. The percussion note was clear, but of a low pitch, such as one meets with in cases of emphysema. I was influenced in the sketch I submitted to the Society of the probable course of events in the case

Fig. 1.

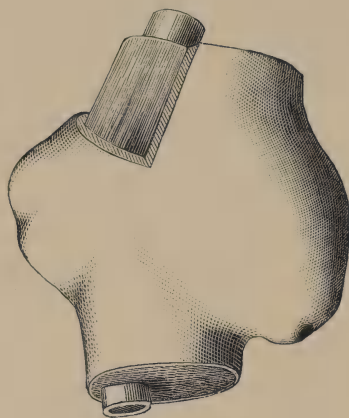


Fig. 2.



by the history of the man's illness, and by the nature of the kidney affection to which Dr. Hayden has alluded. If the kidneys had been chronic contracted granular ones, I should not have hesitated to connect the disease of the heart with them. But hypertrophy of the heart, even with the large white kidney, is the exception, and not the rule. The history of the illness pointed to chronic pulmonary rather than to cardiac disease.—*March 12, 1881.*

Ossifying Enchondroma with Sarcoma.—MR. ABRAHAM said: This is a portion of a lower limb which was amputated some time ago by Mr. Smyly, and presented by him to the Royal College of Surgeons' Museum. The abnormal growths upon it appear to present a sufficient number of points of pathological interest to warrant me in submitting the present communication. The patient, a woman, aged thirty years, had suffered for fourteen years from a diseased knee. A year or two after that trouble commenced, a soft swelling, about two inches long by one inch across, appeared in front of the lower third of the tibia, and grew to its full size in about a month. This consisted of nothing but adipose tissue, closely in connexion with the periosteum, and not enclosed in any definite capsule. For ten years there was little enlargement, if any, of the knee; then a sudden increase at the back of the joint took place, and then there was a respite of the increased growth for three years. The symptoms of pulmonary phthisis now set in and became well marked, and there were periods of severe pain in the leg and rapid growth of the tumour, alternating with exacerbations in the phthisical symptoms. Amputation was performed above the knee, and the wound healed and resulted in a perfect stump. The young woman died of chest complaint five weeks subsequently. It seemed as if the growing tumour acted as a kind of safety valve; for as soon as it was removed the inflammatory and degenerative process of the lungs proceeded without intermission, and rapidly became fatal. A longitudinal section through the knee demonstrates that the new growth (*c*, Fig. 2), springing posteriorly from the lower end of the femur, has grown backwards and downwards, filling up and to some extent pressing aside the structures of the popliteal space. A great portion of the femoral bone (*a*) in the neighbourhood is in a state of degeneration. The encroachment of the neoplasm into the substance of the bone is well seen. The microscopic section on the table proves the growth to be a spindle-celled sarcoma of typical structure. The knee-joint is entirely filled up with an osseous growth (*d*), apparently starting from the lower end of the femur, which seems to have followed the synovial cavity of the joint, the latter becoming thereby ankylosed, and by the increase of size the articular surfaces of the femur and tibia have been separated for a distance of about two centimetres. In spite of this, during life there was no lengthening of the limb, the tissues of the latter

through disuse having suffered sufficient atrophy to balance the separation of the bones of the knee-joint. The microscopic characters of the growth filling up the joint are those of ossifying enchondroma. We have thus three different new growths in the one limb—the fatty, the spindle-celled sarcoma, and the ossified enchondroma; and we have interesting relations established between the activity of growth of at least one of those tumours and the exacerbations of the symptoms of phthisis.

THE PRESIDENT.—With reference to the possibility of multiple forms of tumour in the same region Hunter's theory does not seem applicable to the solid forms of disease. We have here an example of the simultaneous occurrence of a most innocent form of tumour with two of the most malignant—viz., the fatty tumour with the spindle-celled sarcoma, and the ossifying enchondroma, the latter taking the middle place of malignity. The question arises—How is the vascular supply of the growths arranged? Is it the same set of vessels for all, or has each an independent circulation? The solution of this question would to some extent ascertain the starting-point of the disease; for two different kinds of tumour could not exist with the one circulating fluid. The chronology of these growths must be different. A limb possessed by epithelioma might become the seat of another form of malignant tumour, or these growths might not have been contemporaneous at all.

DR. BENNETT.—One point of interest in the case is the great length of time during which the benign tumour progressed. This slow-growing tumour was the primary disease, and it apparently led to the ossification and ankylosis of the knee; and these then appeared to have suddenly taken on a different action and grown with rapidity, and the product of the growth appears to be one of the most malignant of rapid-growing tumours. It is most unfortunate that no *post mortem* examination of the thorax was made, because it would be interesting to know whether the form of phthisis of which the patient died was not in reality sarcomatous disease of the lungs, which in all probability was the case.

MR. ABRAHAM.—She had had phthisis for some years.

THE PRESIDENT.—To what is the purple colour due?

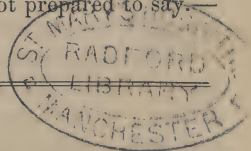
MR. ABRAHAM.—Injection of the arteries was attempted with carmine. Although the three forms of growth are to a certain extent distinct they are all examples of the connective tissue type of tumours. We have no epithelial growth at all. The cartilaginous growth commenced long before the others, and sprang from the periosteum of the femur in front. It is separated by a fibrous band from the new growth, occupying the back of the knee-joint, which is a rapidly malignant one. As to the vascular supply, one growth was probably fed from a branch of the profunda, another by a branch supplying the knee-joint, and the one in front of the leg by a branch of the anterior tibial artery.—*March 19, 1881.*

Paraplegia.—DR. HAYDEN said: This is a spinal cord taken from a gardener who was forty-seven years of age. In the pursuit of his daily avocation he was greatly exposed to wet and cold. His health was excellent up to last Christmas, and then he was suddenly attacked with pain in the left lumbar region. It was exceedingly severe, and quite disabled him. He was obliged to relinquish his work and lie up, and shortly afterwards began to totter upon his lower limbs, and on getting out of bed was unable to support himself. He soon lost the use of his lower limbs entirely, and when admitted to hospital on the 26th of February was paraplegic, and had lost the use of his lower extremities both as to motion and sensation. Pricking of the limbs was unfelt, and there was also loss of reflex irritability; tickling of the soles of the feet produced neither sensation nor movement. By a great effort on the part of the hip muscles he could drag up the lower limbs one or two inches. He had bed-sores, and his urine became charged with pus, and from being acid became ammoniacal, with a specific gravity of 1,024, and then became loaded with blood, which was in very large proportion to the urine. He gradually sank, and died a few days ago. I have not seen the spinal column myself, but my Resident, Mr. Donnelly, has reported to me that two or three of the inferior lumbar vertebræ were hyperæmic and in the early stage of caries, and that the bone tissue was so soft that he could crush it with his thumb. He states that the adjacent vertebræ were bathed in thin pus, and that this matter found entrance into the spinal canal, and was diffused over the external surface of the cord between the bone and the dura mater, extending upwards to the middle dorsal region. This caused the paralysis by making pressure on the cord. I did not examine it until after it had been some time in spirit, and I cannot find any evidence of softening now. The lower portion of it is remarkably firm, but the upper portion is soft and much reduced in diameter. The bladder and the kidneys were not examined, so that I cannot speak as to the precise cause of the vesical hæmorrhage. There was undoubtedly vesical inflammation, but how that gave rise to the copious hæmorrhage from the bladder I am not prepared to say.

March 19, 1881.

IMPROVED STYPTIC COLLOID.

COLLODION, 100 parts; carbolic acid, 10 parts; tannin, 5 parts; benzoic acid (from the gum), 5 parts. Mix in the above order, and perfect solution is effected. This preparation is of a brown colour, and leaves on evaporation a strongly adherent pellicle. It instantly coagulates blood, forming a consistent clot, and a wound rapidly cicatrises under its protection.—*Louisville Medical News*, May 28.



CLINICAL RECORDS.

Aspiration of the Colon in Peritonitis. By D. M. WILLIAMS, L.K.Q.C.P.I., M.R.C.S., Lond.; Physician Liverpool Hospital for Consumption and Diseases of the Chest.

ALFRED B., aged thirteen, a confectioner's apprentice, was taken ill April 30th, 1881, with pain in the bowels. The following day his father gave him a teaspoonful of magnesia, and as he was no better on May 2nd he also gave him one pennyworth of jalap, as his bowels were constipated. This purged him freely, but increased the pain exceedingly.

May 3rd.—I found him suffering from peritonitis. Abdomen very tender; breathing shallow; pulse 120; temperature 103° ; tongue clean and moist; very thirsty; bowels not moved since day before; ordered four leeches to the most sensitive spot, followed by hot, wet flannels applied continually as poultices, and five grains of Dover's powder three times a day, if not relieved; iced milk given frequently in small quantities.

4th.—Passed a restless night; is lying on his back in great pain; abdomen very tender and tympanitic; tongue clean and moist; pulse 120; temperature 104° ; the powders to be taken every four hours; everything else to be continued.

5th.—Somewhat stupefied by the Dover's powder, but no improvement in his general condition, and has great pain in passing water; perspiring freely; pulse 120; evening temperature 104.5° ; abdomen tender and very tympanitic. The following enema was administered:—Turpentine, ℥ss. , the yolk of one egg, and a teacupful of soapy water. A small motion followed, and he passed water.

6th.—Much the same; had passed water again with much pain.

7th.—Ten grs. of Dover's powder were given at bed-time, but failed to relieve him, so that he had a very bad night.

8th.—His condition was now alarming; the pulse was, for the first time, irregular and compressible—144 to the minute; breathing very shallow; eyes sunken; cheeks hollow; tongue dry; constantly moaning with pain—evidently dying. He placed his hand on the epigastrium, and said the pain was smothering him, no doubt from pressure upwards of the diaphragm interfering with the action of heart and lungs. The abdomen was arched from the xiphoid appendix to pubes, the least attempt at percussion causing great agony. Had not passed water since the 7th. I determined to aspirate him, and passed the finest needle into the transverse colon, and on turning the tap a great quantity of flatus rushed

through, followed by three ounces of fluid fæces, which gave him great relief, but did not perceptibly diminish the size of the abdomen. Fearing the needle was blocked, I withdrew it, and found such was not the case. I had evidently emptied this portion of the colon. Having washed the needle, I pierced the ascending colon; another rush of flatus took place, followed by eight ounces of fæces. I repeated the operation on the descending colon with the same result. There was now very decided diminution of distension and relief of pain, still he complained bitterly of a spot just below the navel, which was quite tympanitic. Taking care to avoid the bladder, I pierced probably the ileum; more flatus escaped, with about half an ounce of fluid fæces. He was now much relieved; pulse had fallen to 96; breathed deeper. 10 p.m.—Much the same as after the tapping; expression of face less haggard; pulse 120, full and soft; temperature 102°; passed water freely, and without pain, an hour after the tapping. To take pulv. Doveri, gr. 10, h. s.

9th.—Had a fairly good night, sleeping for an hour at a time, and perspiring freely; expression of face much better; eyes brighter; tongue clean and moist; pulse 116; passed flatus several times in the night, which had a most offensive smell; still complains of pain.

10th.—Bowels moved freely at six this morning; a large firm motion and three liquid motions since; abdomen much flatter, less tender; tongue dry, probably from the opium; pulse 104; temperature 100°. 9 p.m.—Has been restless all day; bowels moved four times, still complains of pain, especially in the right iliac region, which is dull on percussion. It was only now that he mentioned that on the morning of his illness he had no breakfast, and, being hungry, had eaten a handful of blanched almonds. Ordered: ol. ricini, ʒii., tinct. opii m. x., statim sumend., and to have a starch enema, with half a teaspoonful of laudanum, if not relieved in two hours.

11th.—The oil and enema had been administered, and he passed a good night; bowels moved freely at 6 a.m.; the relief from pain complete; looks much better; pulse 108; dulness in right iliac region gone; stopped all medicine, and ordered milk diet.

From this time his recovery was only interrupted by occasional tendency to diarrhœa, probably due to the jalap, the quantity of which I have since estimated to weigh 90 grains.

REMEDY FOR HAY FEVER.

INTO a 4-oz. wide-mouth bottle, half filled with cotton, and having a close stopper, put the following mixture:—Carbolic acid, 2½ drachms; water of ammonia (specific gravity 0.960), 3 drachms; distilled water, 5 drachms; alcohol, 7½ drachms; and inhale through the nostrils.—*Chemist and Druggist.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, September 10, 1881.

Towns	Population in 1881 (Unre- vised)	Births Registered	DEATHS REGISTERED			DEATHS FROM ZYMOTIC DISEASES							Deaths from Phthisis	Annual Rate of Mortality per 1,000 inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin, -	348,525	734	486	101	112	-	2	6	1	-	22	23	70	18.0
Belfast, -	207,671	504	308	77	39	2	1	3	-	4	9	26	60	19.3
Cork, -	78,361	156	145	22	38	-	1	-	-	3	3	19	16	24.1
Limerick, -	38,600	65	63	14	12	-	-	8	-	1	3	4	4	21.3
Derry, -	28,947	59	39	8	12	-	-	-	-	-	3	1	7	19.3
Waterford, -	22,401	63	45	8	14	-	-	-	-	-	3	5	3	26.1
Newry, -	14,782	29	19	2	8	-	-	-	-	-	-	2	2	16.7
Galway, -	14,621	32	29	5	7	-	-	-	2	-	3	1	5	25.8

Remarks.

Except in Waterford, Galway, and Cork, the death-rate was moderate or low. It was 19.1 per 1,000 of the population annually in twenty large English towns, including London (in which the rate was 17.8), 20.4 in Glasgow, 16.9 in Edinburgh, and 19.3 in the sixteen principal town districts of Ireland. These unusually low rates of mortality were dependent on the cool wet weather which prevailed during the greater part of August. The temperature was not low enough to cause the pulmonary diseases of winter, while the coolness and abundant rainfall checked the prevalence of the diarrhoeal diseases of summer. Omitting the deaths (19) of persons admitted into public institutions from localities outside the district, the deaths registered in the Dublin registration district represent an annual rate of mortality of only 17.4 per 1,000 of the population annually, and those registered within the municipal boundary give a death-rate of 19.1 per 1,000. Zymotic affections caused only 71 deaths in Dublin, compared with an average of 156.0 in the corresponding period of the previous ten years. The most fatal diseases of this class were diarrhoea (23 fatal cases) and fever (22 fatal cases). Of the 22 deaths attributed to continued fever, 7 were assigned

to typhus, 9 to typhoid, and 6 to so-called "simple continued fever." Diarrhœa was prevalent and fatal in Belfast, Cork, and Waterford. Eight deaths were referred to scarlet fever in Limerick, and smallpox proved fatal in two instances in Belfast. Phthisis was fatal in Dublin, Belfast, and Cork—14·4 per cent. of all the deaths in Dublin were ascribed to this disease. The mortality from diseases of the respiratory organs was low in Dublin—there were 55 deaths, compared with a ten-years' average of 65·0. They included 40 from bronchitis (average = 43·2) and 6 from pneumonia (average = 13·5). It will thus be seen that while the mortality from bronchitis almost equalled the average, that from pneumonia (often a pythogenic disease) fell far short of it. In London the deaths from smallpox fell from 149 in the preceding four weeks to 123. The influence of cool weather on the fatality of diarrhœa in the metropolis is also remarkably well shown. The deaths numbered 354, against 1,451 in the previous four weeks. They were distributed as follows over the four weeks—first week, 141; second, 117; third, 57; and fourth, 39.

At the close of the period the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals was as follows—smallpox, 0; measles, 5; scarlet fever, 16; typhus, 50; typhoid, 9; pneumonia, 6.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of August, 1881.

Mean Height of Barometer,	-	-	-	29·795 inches.
Maximal Height of Barometer (on 31st at 9 p.m.),	-	-	-	30·373 „
Minimal Height of Barometer (on 25th at 10 30 p.m.),	-	-	-	29·014 „
Mean Dry-bulb Temperature,	-	-	-	56·6°.
Mean Wet-bulb Temperature,	-	-	-	54·0°.
Mean Dew-point Temperature,	-	-	-	51·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·383 inch.
Mean Humidity,	-	-	-	83·7 per cent.
Highest Temperature in Shade (on 4th),	-	-	-	75·5°.
Lowest Temperature in Shade (on 21st),	-	-	-	45·4°.
Lowest Temperature on Grass (Radiation) (on 21st),	-	-	-	41·7°.
Mean Amount of Cloud,	-	-	-	70·0 per cent.
Rainfall (on 21 days),	-	-	-	4·739 inches.
Greatest Daily Rainfall (on 11th),	-	-	-	·700 inch.
General Directions of Wind,	-	-	-	S.W., W., N.W.

Remarks.

The month opened with a fair promise, which was destined not to be fulfilled, for after the first few days, which were fine and warm, the

weather became very unsettled with strong winds, frequent rains, and a low temperature. On the 1st an anticyclone developed over the S. of England and N. of France, and a period of fine, warm weather set in. In Ireland the winds were south-westerly, but cloud prevented the temperature from rising very high. In Dublin, however, a maximum of 75.5° was attained on the 4th. In London the thermometer reached 80° on that day and 84° on the 5th. Very changeable, and at times blustering, weather prevailed after the 7th, owing to the passage north-eastwards across the N.W. of Europe of a series of barometrical depressions with their subsidiaries. On the forenoon of the 17th dense rain clouds formed over Dublin, and at 12 20 p.m. thunder occurred, which was followed by a downpour of rain and hail. The atmospherical depressions now began to travel eastwards further south than before, so that easterly winds were sometimes felt in Scotland, the N. of England, and Ireland. Within fourteen hours after midnight of the 19th an inch of rain fell in Dublin. Most unsettled weather was experienced during the greater part of the week beginning on the 21st. On the 25th and 26th a very well-marked cyclonic system passed towards E.N.E. across the United Kingdom, growing deeper as it advanced and causing a downpour of rain. The barometer fell to 29.01 inches in Dublin at 10 30 p.m. of the 25th and to 28.88 inches at Leith at 8 a.m. the following morning. On the 29th a small depression came in over the W. of Ireland from the Atlantic and travelled eastwards to North Germany, which it reached on the morning of the 31st. In its wake northerly winds sprang up, and the weather became dry, cold, and very fine. The rainfall of the month was nearly four and three-quarter inches, and rain fell on 21 days. The mean temperature (56.6°) was 3° below that of August in the previous fifteen years. It is worth noting that the rainfall in Dublin since January 1 equals 18.262 inches, and has been distributed over 134 days. These figures represent annual totals of 27.393 inches and 201 days.

AN INSTRUMENT FOR THE REMOVAL OF SUPERFLUOUS HAIRS.

DR. L. A. DUHRING, Professor of Skin Diseases in the Hospital of the University of Pennsylvania, has devised a very convenient instrument for the removal of superfluous hairs by means of the galvanic current. The device is described in the July number of the *American Journal of the Medical Sciences*, and a cut of the instrument is given. It is of the shape of a thin lead pencil, about four inches in length. The body is of hard rubber, through which passes a metallic rod conductor. The needle is inserted in one end. On the other end of the stem there is an insulated inserting pin attached to the cord leading to the battery. The instrument is well adapted for the operation.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

OPHTHALMIA NEONATORUM.

IN a "special article" in *The New York Medical Journal and Obstetrical Review* for July, 1881, Dr. Charles Stedman Bull, Surgeon to the New York Eye and Ear Infirmary, writes of the ophthalmia of new-born infants, dividing the affection into (1) purulent, (2) croupous or membranous, and (3) diphtheritic conjunctivitis. Recognising the purulent form of the disease as due in the great majority of instances to inoculation with the muco-purulent or purulent discharge from the mother's vagina during parturition, the practical question is one of prophylaxis; and to this end the care of the disease must be placed in the hands of the obstetrician and those of the nurse, and on them must rest the responsibility of the result. The prophylactic measures recommended by the writer are as follows:—In all cases of vaginal discharge in parturient women, whether specific or not, the vagina should be carefully cleansed and disinfected repeatedly before parturition begins. As soon as the child is born the external surface and edges of the eyelids should be carefully cleansed with a one or two per cent. solution of carbolic acid, and then the conjunctival *cul-de-sac* washed out with some of the same solution, or with a saturated solution of boracic acid. This must be done by the attending physician, or by a skilled nurse under his supervision. The eyes of all new-born children should be carefully watched for the first week or ten days, and, whenever any signs of an ordinary catarrhal conjunctivitis appear, the conjunctiva should be thoroughly brushed over with a solution of nitrate of silver, from two to five grains to the ounce of water. If the conjunctivitis has become purulent, and the case is one of real ophthalmia neonatorum, the child should, if possible, be isolated from all healthy infants, and have its own bath-tub. If this is not possible, the diseased infant should be bathed *last*, and no sponges should be used, but only cloths, which can afterward be destroyed. If one eye only is affected, do not apply the hermetically-sealed bandage to the sound eye, but envelop the arms or hands of the baby, so as to prevent the secretion from being carried to the fellow-eye, and lay the child upon the side corresponding to the diseased eye. The most important feature in the treatment is enforced cleanliness. This requires constant attention and the frequent use of some soft cloths and plenty of water. The use of cold cloths, dipped in cold water or even iced water, and laid on the eyelids, must be regulated by the amount of swelling of

the lids and heat of the parts. As soon as the lids can be everted, the proper treatment is a thorough application of nitrate of silver to the conjunctiva of the lid and retrotarsal fold, daily, and sometimes twice a day. If this is thoroughly done, a five-grain solution will in most cases suffice; but where there are profuse secretion and considerable swelling of the conjunctiva a ten-grain solution becomes necessary. When, owing to marked hypertrophy of the papillary structure of the conjunctiva, a stronger caustic becomes necessary, it is better to discard solutions, and employ the lapis mitigatus (one part nitrate of silver to two parts nitrate of potassium), and neutralise its effect by a subsequent washing with a solution of common salt. It is well to employ a one-grain solution of sulphate of atropia in a saturated solution of boracic acid in every case of purulent ophthalmia, as the great danger in this disease is purulent infiltration and perforation of the cornea. Should this infiltration occur at the centre of the cornea, the atropia should be instilled frequently, for if perforation occurs the dilatation of the pupil will prevent a large prolapse of the iris through the perforation. If the infiltration of the cornea, on the contrary, be at or near the margin, it is better to employ a two-grain solution of the sulphate of eserine, as thus an extensive prolapse of the iris may be prevented if the ulcer perforate. In all cases the cleansing and washing of the lids and conjunctiva should be done with a saturated solution of boracic acid, and the atropia and eserine should be dissolved in the same. As regards the membranous form of the disease, Dr. Bull dissents decidedly from Saemisch's statement that in a small number of cases it merges into the diphtheritic variety, holding that the two are distinct diseases. The diphtheritic form is very rare in the United States and Great Britain. Out of more than twenty thousand cases of eye disease the author has seen but ten cases. The prognosis is almost always bad in this variety, owing to the very rapid strangulation of the tissues. The author agrees with von Graefe that while in many cases diphtheritic conjunctivitis is a symptom of a general disease, yet there are cases in which it is a local disorder, caused by infection with the secretion from a purulent ophthalmia.

NEURITIS IN STUMPS.

M. NEPVEU (*Rev. de Chir.*, Jan., 1881) has made a study of cases of neuritis in stumps, and particularly of ascending neuritis, with the following results:—An ascending neuritis in a stump may take on two very different forms—one simple, the other complicated with myelitis. The simple form may be accompanied by persistent neuralgia or by trophic troubles in the stump. The form complicated with myelitis may present itself under two different aspects—sometimes it attacks the superior extremity on the same side as the stump (ascending neuritis and unilateral myelitis); sometimes the myelitis is transverse, and then

the phenomena of paralysis of the bladder, of paralysis and neuralgia, or of contracture of the lower extremity on the opposite side will supervene. Myelitis may be followed by sudden death. It may be cured, as in a case observed by the author. As a prophylactic, M. Verneuil has recommended the resection of the nerve trunks to a certain extent at the time of the amputation. This operation would probably have the effect of diminishing the number of cases of neuritis of both kinds, ascending and localised, in those who had submitted to amputation. Re-amputation and section of the nerve have been employed with varying success, but surgical intervention has succeeded in only three cases, and has failed in as many others.—*N. Y. Med. Jour.*, May, 1881.

ACTION OF CHLOROFORM, ETHIDENE, AND ETHER COMPARED.

In an article in the *New York Medical Journal* for May, 1881, Dr. Gaspar Griswold, of New York, thus compares the effects of these anæsthetics: *Clinical*.—1. The dose (administered on a towel) is greater with ethidene than chloroform; the time required to anæsthetise the patient is longer with chloroform. 2. Vomiting is equally frequent in the case of both agents, but is more protracted in that of chloroform; this symptom occurs independently of the duration of anæsthesia or the quantity of anæsthetic administered. 3. With both agents the pulse is retarded and fails, while the respirations become more frequent; these changes are more frequent and more marked with chloroform. *Physiological*.—1. Chloroform and ethidene, in animals, reduce the blood pressure decidedly—chloroform more rapidly and more decidedly; ether does not affect the blood pressure unfavourably. 2. Chloroform may reduce the blood pressure suddenly and apparently capriciously; ethidene has not been observed to do this. 3. In one instance, artificial respiration restored a dog whose heart had ceased beating, for a considerable time, from the effect of chloroform; it is therefore an efficient means of resuscitation. 4. Ethidene seems much safer than chloroform; in no instance has the heart or respiration, though sometimes much reduced, stopped entirely during its administration. 5. Chloroform affects the pulmonary circulation most; ethidene next; ether least. 6. The quantity of air and the time required to restore the circulation in the lungs are in inverse ratio to the amount of anæsthetic vapour and time necessary to stop it. 7. The changes produced in the lungs are the same in all, the only difference being in the rapidity of their occurrence; these changes are—(1) retardation and ultimate stoppage of the circulation in the lungs, first in the capillaries, then in the arterioles, &c.; (2) the epithelium cells and their nuclei disappear; (3) the capillaries contract, their walls become less distinct or disappear, and the contained corpuscles disintegrate. *Practical*.—1. It is necessary to remember that frequency of the respirations denotes heart failure, and that diminished blood

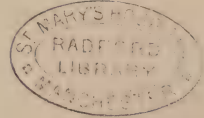
pressure may show itself by respiratory failure from anæmia of the medulla. 2. It is essential that the possibility of chloroform and ethidene—especially chloroform—reducing the blood pressure suddenly, even after their administration has been stopped for some little time, should not be lost sight of. Artificial respiration should be continued, even though all evidence of cardiac action has ceased. 3. As regards comparative danger, the order is—chloroform, ethidene, ether; as regards facility of resuscitation, the order is inverted—ether, ethidene, chloroform. 4. The danger with chloroform is silent and sudden, approaches from the cardiac side, and is difficult to meet; the danger with ether is noisy and progressive, approaches from the pulmonary side, and may be efficiently warded off by artificial respiration. Ethidene resembles chloroform, but is less dangerous.

OPHTHALMOLOGY: MIDDLEMORE FUND PRIZE ESSAY.

THE interest on the fund of £500 given in trust to the British Medical Association by Mr. Richard Middlemore of Birmingham, to found a prize for the best essay on Ophthalmology, having accumulated for three years, the Committee of Council now offer, in accordance with the terms of the trust deed, a prize of £50 for the best essay on the Scientific and Practical Value of Improvements in Ophthalmological Medicine and Surgery made or published during the past three years. The successful essay will be the property of the Association. Essays must be in English or accompanied by an English translation, and forwarded under cover, with a sealed envelope bearing the motto of the essay, and containing the name and address of the author, addressed to the General Secretary of the British Medical Association, 161A, Strand, London, and must be in his hands on or before May 31st, 1882.—*British Medical Journal*.

BENZOIC ACID IN THE ALBUMINURIA OF PREGNANCY AND SCARLATINA.

THE presence of albumen in the urine of pregnant women, and in urine after scarlatina, is regarded always as a dangerous symptom when occurring as a pathological condition. Dr. W. Scott Hill, of Augusta, Maine, calls attention to the value of benzoic acid in such cases, in an article in the *American Journal of the Medical Sciences* for July, 1881. The influence of benzoic acid upon albuminuria, and its property to cause the rapid disappearance of the albumen, is not mentioned in the text-books, but that it has value the experience of Dr. Hill appears to demonstrate, the notes of four cases being communicated in the paper. The acid was given in doses of $\frac{1}{10}$ to 2 grains, frequently repeated.



Abdominal aorta showing abdominal trunk. Splenic artery & vein. Superior mesenteric artery & vein. Inferior mesenteric artery & vein. Renal arteries & veins. Aorta abdominalis. The B. a.

MR BUTCHER'S REPORTS ON OPERATIVE SURGERY
 LIVER. NO. 1. HEPATICA. LAC. ARTERY HIGH UP
 APPEARANCE OF THE VESICLE RIGHT VESICLE AFTER THE USE
 COVERED FROM THE SPLENDID PREPARATION IN

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

NOVEMBER 1, 1881.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*Reports in Operative Surgery.* By RICHARD G. BUTCHER, M.R.I.A.; M.D. (Honoris Causâ) of the University of Dublin; University Lecturer on Operative Surgery, and Surgeon to Sir P. Dun's Hospital; Examiner on Operative and Practical Surgery in the University of Dublin; late Senior Surgeon to Mercer's Hospital, and Lecturer on Clinical Surgery; Honorary M.D. of the College of Physicians of Philadelphia; Ex-President of the Royal College of Surgeons of Ireland; Fellow, Licentiate, and Member of the Council of that Body, and for many years President of its Surgical Court of Examiners; likewise Examiner on Surgery, Anatomy, and Physiology in the College for many years; Member of the Royal College of Surgeons of England; Corresponding Member of the Surgical Society of Liège; &c., &c., &c.

I WISH to comply with the request of some friends of mine in placing on record the following rare cases in Operative and Practical Surgery, with observations suitable to each:—

- I. ENORMOUS INGUINAL ANEURISM CURED BY LIGATURE OF THE EXTERNAL ILIAC ARTERY HIGH UP; DEATH OF PATIENT EIGHT YEARS AFTER THE OPERATION; SHORT HISTORY OF THE CASE AND THE POST MORTEM APPEARANCES, AND THE CONDITION OF THE VASCULAR SYSTEM IN BOTH LIMBS, ILLUSTRATED BY A BEAUTIFUL PLATE TAKEN MOST ACCURATELY FROM THE PREPARATION IN MY MUSEUM.

- II. DEPRESSED PART OF FRONTAL BONE FROM GUNSHOT WOUND ; CONSIDERABLE DEPOSITS BEHIND OCCURRING SOME TIME AFTER THE ACCIDENT, PRODUCING PRESSURE ON THE BRAIN ; FITS AND MADNESS ; OPERATION OF TREPHINING PERFECTLY SUCCESSFUL IN REMOVING ALL SYMPTOMS ; RECOVERY.
- III. DEPRESSED FRACTURE AT THE LOWER ANGLE OF THE PARIETAL BONE AND SQUAMOUS PORTION OF THE TEMPORAL, CAUSED BY THE KICK OF A HORSE ; FITS, INABILITY TO DO ANY WORK ; THE SEAT OF INJURY TREPHINED, AND PERFECT RECOVERY ; WORKING WITH HIS EMPLOYER FOR YEARS AND NO INCONVENIENCE OF ANY KIND SINCE THE OPERATION.
- IV. SUICIDAL WOUND OF THE THROAT IMPLICATING THE TRUNK OF THE COMMON CAROTID LOW DOWN, SUCCESSFULLY LIGATURED ABOVE AND BELOW THE WOUND ; PERFECT RECOVERY.
- V. VERY LARGE SPINA BIFIDA, INVOLVING THE ENTIRE CERVICAL REGION, TREATED BY A NEW OPERATION ; CHEMICAL ANALYSIS OF THE FLUID, MOST ACCURATELY TAKEN, DISPROVING MANY OF THE IDEAS FLOATING THROUGH THE CLASS-BOOKS OF THE DAY.
- VI. EXTENSIVE DISEASE OF THE LOWER END OF THE THIGH BONE ; LARGE PROJECTING PIECE THREATENING THE POPLITEAL VESSELS ; THE ENTIRE CUT OUT BY A MOST FORMIDABLE OPERATION ; PERFECT RECOVERY, WITH ENTIRE USE OF THE LIMB.
- VII. DOUBLE COMPLICATED HARE-LIP OF THE GRAVEST FORM, WITH DOUBLE-CLEFT PALATE HARD AND SOFT ; INTER-MAXILLARY BONES UNITED IN A SOLID MASS, THE VOMER BEING GREATLY THICKENED AND EXPANDED FROM THE POINT OF THEIR ATTACHMENT, THE ENTIRE STANDING PROMINENTLY FORWARD WITH FOUR CROOKED TEETH ; THE NOSE WAS THRUST ENTIRELY OVER TO THE LEFT SIDE, ITS MASSIVE APEX POINTING MOST REMARKABLY IN THAT DIRECTION, WHILE THE ALÆ WERE SPREAD OUT QUITE HORIZONTALLY, SO THAT A MORE HIDEOUS ARRANGEMENT COULD NOT BE DEPICTED ; CURED WITHOUT DEFORMITY.

VIII. HORRID COMPLICATED SINGLE HARE-LIP ; SINGLE FISSURE THROUGH LEFT SIDE, THROUGH HARD AND SOFT PALATES ; VERY WIDE IN FRONT, THE GAP FREELY ADMITTING THE THUMB ; AND THIS SPACE BEING DUE TO THE REMARKABLE WAY IN WHICH THE UNITED OSSA INCISIVA ATTACHED TO THE RIGHT SUPERIOR MAXILLARY BONE STOOD PROMINENTLY, ALMOST STRAIGHT, FORWARD AND EVEN ABOVE AND TO THE RIGHT OF THE TIP OF THE NOSE ; CURED WITHOUT DEFORMITY.

CASE I.—*Enormous Inguinal Aneurism cured by Ligature of the External Iliac Artery high up ; Death of Patient eight years after the operation ; Short History of the Case and the post mortem appearances, and the Condition of the Vascular System in the Limbs, illustrated by a beautiful Plate taken most accurately from the preparation in my Museum.*—In *The Dublin Medical Journal* for 1872 I published a remarkable case of “Enormous Inguinal Aneurism treated successfully by Ligature of the Iliac Artery high up, and accompanied by the most serious complications, cured by Operative Surgery.” I wish to draw attention to it now, because the man has died, eight years after the operation, and I was so fortunate as to procure an examination of the body, and to note down all particulars of interest in this very remarkable case, and likewise was able to take away the entire vascular arrangement concerned—the heart, the aorta, the bifurcating iliacs, the common iliacs, the ligatured vessel, the aneurismal sac, the femoral artery on the right side as far as its entrance into the popliteal spaces, and on the left as far as the groin ; and likewise to preserve the important anastomosing vessels on either side and the changes produced upon them on the right side by the cutting off of the main current of the limb, and to show how largely they increased, and secured by an abundant supply of blood the healthy life and nutrition of the limb operated upon. I may here mention that I should have much preferred to have inserted a pipe into the aorta, and injected a fine wax injection, coloured with vermilion, so as to fill the arterial system perfectly on both sides, and then displayed the vessels by a rapid dissection in their relative positions on either side, and then dried and varnished the preparation. The friends were so anxious about the man after death this could not be done ; so I did the next best thing—I cut out carefully all the vessels, as I have described, and as seen in the beautiful preparation, which is carefully preserved. There were many points of the very deepest interest about this case, and a short abstract and history must be given here before the revelations of the *post mortem* examination.

The patient was very old, seventy-six years of age ; the tumour was very large, filling up the entire inguinal region in the right thigh, and extending above Poupart's ligament. Twelve months before the operation

he sustained an injury in the thigh "when unloading some stones from a cart;" one fell forcibly upon him, bruising the middle of the right thigh. The pain set in very acutely, so that he had to give up work for several days. At the end of the third month after the accident he perceived a beating tumour at the groin, but could not distinctly affirm that this part was not also injured when the stone fell upon him, the stone being of so large a size. Gradually and steadily the tumour began to enlarge. During the long period of nine months, from the first week of which the patient noticed the "jumping" of the tumour when only the size of a walnut, until the date he applied to me, when the tumour assumed the size of a large melon, he daily exerted himself in bodily labour, and in constantly carrying very heavy weights. In the Journal referred to, the position and size of the aneurismal tumour are accurately portrayed. The circumference of the limb at the most prominent part of the tumour measured nineteen inches, while that of the sound thigh at a corresponding point was only fourteen. On the 10th January, 1872, I tied the external iliac artery, and on February the 13th, when "dressing the wound, I made the slightest traction on the ligature, when it came away, thirty-five days after its application, and without a trace of blood after it; dressed and supported the wound as before. The ligature had been well tied, and was perfect in its integrity, and holding the external coat of the artery in its loop." On the 28th March all the difficulties and dangers of the operation were overcome, the ligature safely away, the wound perfectly healed from its deepest part to the surface, the aneurismal tumour solidified, and undergoing rapid diminution by absorption. The patient could flex and extend both the leg and thigh without the slightest pain, the joints only being a little stiffened. The temperature and sensibility of the limb were at the same height and as perfect as in the sound one. The patient was still restricted to bed, the limb being supported on pillows, and rolled from the toes to the groin with a flannel bandage, gentle pressure being made over the tumour as it was passed upwards to encircle the abdomen and give support to its enfeebled wall on the right side. Up to this date everything had gone on well, and surgery had been triumphant in saving the man's life. Up to the middle of April (the 14th) he bore with steadiness the restrictions imposed upon him—confinement to bed, rest in the semi-horizontal position, and quietude of the limb. At this time the patient's whole condition was greatly improved; he was strong, put up a good deal of flesh, and was in excellent spirits. The aneurismal tumour had considerably diminished, and there was an entire absence of pain or uneasiness in the affected limb, and its temperature and sensibility were the same as in the sound one, and its motions of flexion and extension were quite perfect. On the 25th of April the patient began to complain of weight and uneasiness in the tumour, and on examination I perceived

there was also an increase of temperature. Together with these changes there was considerable constitutional disturbance. He felt hot and burning the evening before, refused all food, and vomited frequently; he had no sleep. I was astonished at the suddenness of this change, and after some difficulty, owing to prevarication, made out the cause. For several days prior the man was in the habit, after I left the hospital, of getting on his clothes and walking about the garden for some hours together. He then admitted that after doing so, on the third day, he experienced an uncomfortable tightness in the limb. This sensation was relieved after going back to bed and taking rest. Every day that he went out, from this time up to the date of this invasion of fever, he suffered more or less in the tumour and the limb, and towards the end of this period, though he sometimes suffered acutely, yet he was afraid to complain, and was in the habit himself of adjusting the flannel bandage, and absolutely concealing the mischief which he had originated by his own indiscretion. The case now presented a most alarming aspect; rapidly the constitutional symptoms assumed the lowest type; the pulse was quick, 125, very feeble, and sometimes intermitting; the tongue was dry, brown, and hard; the eyes suffused, the features pinched and shrunken, the skin dry and burning; the urine secreted in very small quantity, scanty, and high-coloured. The stomach was, after some time, quieted by repeated doses of hydrocyanic acid, with creasote and iced champagne, while the integument over this region was vesicated, the cuticle removed, and the raw surface sprinkled over with morphia. Brandy had to be given in large and repeated quantities to support and steady the heart's action, and strong beef-tea and chicken jelly for nourishment. The limb was evenly rolled in flannel as far as the knee, while all the swollen thigh was wrapped in flannels wrung out of hot opiate stupes, and enveloped in oiled silk; at the same time the limb was elevated to a considerable height, so as to favour the returning blood. By these means the burning tensive pain was partly lulled; opium had to be given in large doses, in conjunction with stimulants, every third hour, and so at least modified rest was procured. On the 3rd of May I found the constitutional symptoms were, in some respects, relieved, yet the local changes were far more alarming. The stomach had been quieted, light nourishment could be retained, and the abundant stimulants and opium taken sustained the pulse, and modified pain. On examination of the thigh it was fully twice the bulk of the sound one. The surface, particularly over the tumour, presented a purplish-reddish hue, and on pressure, which created intense pain, a kind of boggy, imperfect fluctuation was communicated to the hand. It was quite clear now what had taken place—acute inflammation of a diffuse character had been set up in the sac, with imperfect suppuration. I decided on freeing the fascia, opening the sac, and turning out the entire contents—ligatures, tenacula,

broad-curved spatulæ, and knives being prepared, so as at once to arrest hæmorrhage, should it occur either by direct division of vessels during the operation, or from some vessel yielding a recurrent supply to the sac. An incision was made from about the centre of Poupart's ligament, extending downwards for about six inches over the most prominent part of the tumour, dividing the integuments, superficial and deep fascias. A director was passed for two inches lower down beneath the fascia lata, and a straight long bistoury was conveyed upon it, its edge then turned forwards, and the fascia divided by the withdrawal of the instrument, the integument not being cut. *I have frequently drawn attention to the advantages arising by this subcutaneous method of cutting short tensive inflammation of a fascia.* The knife was then carried through the anterior wall of the tumour to the same extent as the first incision, and immediately on its division a large quantity of grumous blood, broken-up lymph, and imperfect pus gushed out, following the track of the knife. I next, with my fingers, turned out a quantity of solid coagula, of lymph and blood, and dressed the exterior cavity with lint soaked in oil, having previously brushed the entire surface over with a strong solution of chloride of zinc (twenty grains to the ounce). It was a fortunate occurrence that no arterial blood flowed after these extensive incisions and the manipulation required to clear out the part of offensive matters. At 3 p.m. the patient rallied well from the shock. May 25th—The wound is now healed, and bears being handled with impunity. He is able again to flex and extend the leg and thigh without uneasiness. The whole aspect of the man is changed in a most remarkable way. The anxious, haggard expression which he had on admission to hospital, and again when the diffuse inflammation attacked the thigh, is altogether gone. He has put up flesh in a rapid manner. The report goes on to state:—At this time I took an accurate cast of the abdomen and thighs down to the knees, and the drawing from it shows well the increased bulk of the limb, the position of the wounds, the one for ligaturing the artery and that for liberating the fascia of the thigh, and evacuating its disorganised contents. It contrasts well with the drawing beside it, copied with great accuracy from a cast which I took from the man before the operation. The knee is well delineated in all its aspects, and the emaciated condition of the limb speaks forcibly of his weakened state at this time (see Plate II., Figs. 1 and 2, in paper referred to). The frontispiece to the paper in the *Quarterly Journal* referred to has been beautifully lithographed by Mr. Forster, from a fine photograph taken by Lesage from the patient a month after he had been walking about quite well. I may here state, in continuation of the history of this case, that it may appear I have dwelt too much upon details, and so be tedious to some, but I cannot regret having done so. From the very first the aspect of the case was alarming, considering the

advanced age of the man, his emaciated condition, the enormous size of the tumour, its extension above Poupart's ligament, and its almost entirely fluid contents. Again, it was essential to dwell upon the many changes made in the local management of this case immediately after the operation, during the long time of the detention of the ligature, and after the separation of the cord. So far may be considered as the first part of the case. Well, then, the secondary or after-part of the case surely affords one of the most instructive lessons in practical surgery, when, by the man's recklessness, his life was again imperilled, yet, by the boldness of the measures adopted, his life was secured, and his limb preserved in every respect as perfect as the other. Shortly after this the man left the hospital perfectly well, and resumed his former occupation as overseer to a large timber yard. The man, after this, often called to see me to show how well he was, and able to follow his work without interruption. At the latter end of January, 1880, he was suffering from a very severe acute attack of bronchitis, the violent and pressing symptoms were arrested, but on slight exposure he again got a relapse, and died March, 1880.

Post mortem examination eighteen hours after death.

Thorax.—The lower lobe of the left lung was greatly congested, and the pleural cavity contained a large quantity of fluid, slightly reddish; the lining membrane of the bronchial tubes was congested, with fine ramiform injection of the vessels throughout, and the tubes were choked up, filled with mucous secretion.

The right lung was intimately adherent to the chest wall, except in two places, where there were two considerable encysted pleural effusions; its lower lobe was also encysted, and the bronchial tubes throughout filled with mucus; the lining membrane of the tubes presented the same vermilion tint as that in the tubes of the left lung from minute ramiform arterial congestion.

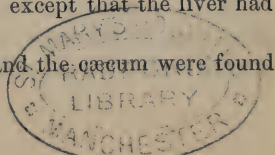
The *pericardium* did not contain any unnatural fluid; a slight halitus moistened the opposing surfaces; nothing unnatural.

Heart.—On opening the heart the mitral valve was found slightly atheromatous, but quite competent to close the opening. The left ventricle was a little enlarged, and all three aortic valves were atheromatous and projecting from the wall of the artery, like stiffened long shelves. The aorta was atheromatous through its entire length (Fig. 1).

Abdomen.—There was no abnormal fluid in the abdomen. When cutting through the abdominal wall the deep epigastric artery was found more than three times its normal size, and also the internal mammary when anastomosing with it.

The viscera of the abdomen were healthy, except that the liver had undergone some fatty degeneration.

When removing the viscera the omentum and the cæcum were found



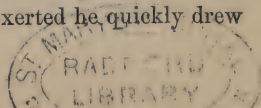
united by bands—lymph bands of adhesion about two to three inches in length—to the internal line of the cicatrix, made for securing the main vessel. When dissecting off the peritoneum to remove the arteries the right ureter was intimately adherent to the internal and external iliac artery on the right side; at the same time its calibre was unconstricted and its functions not interfered with or interrupted by pressure. The external iliac artery was so firmly united to the iliac fascia that it had to be removed along with the vessel; the arteries on the right side were dissected out as far as the popliteal space. When the dissection was continued *it was found that the external iliac artery on the right side was reduced to a fibrous cord through its entire length, as was also the common femoral as far as the sac. The superficial femoral started as a cord from the distal extremity of a mass of cicatricial tissue, which represented the sac that had to be laid open and its entire contents turned out, and was impervious as far as the opening in the adductor magnus to the popliteal space.* The profunda femoris which was given off from the posterior surface of the sac was obliterated for about an inch and a half, and then all the branches from it were considerably dilated by anastomosing currents. The right internal iliac artery was much larger than the external iliac of the opposite side, and its four branches, which leave the pelvis as seen in the preparation, were more than three times their normal size. *The veins, the femoral and profunda, lay behind the aneurism, and were quite pervious, contrary to the opinions expressed in some of the class-books of the day, and to the fact of their returning the blood freely from the limb* I impute much of the success of the operation and the safety of the limb from gangrene. From the facts which I have detailed, from an examination of this beautiful specimen in my possession, and represented here though feebly, it will at once be conceded and understood how that from the enlarged and numerous anastomosing vessels and full supply of blood the limb was well nourished and restored to all its functions.

CASE II.—*Depressed part of Frontal Bone from gunshot wound; considerable deposits behind occurring some time after the accident, producing pressure on the Brain; Fits and Madness; Operation of Trephining perfectly successful in removing all symptoms; Recovery.*—Mr. D. B., aged twenty-one. In December, 1867, I was consulted about the following very remarkable case. Two years before this time the young man shot himself in the forehead in the following way: Some young friends of his were jeering him in a back yard as he stood at a window looking out. He raised up the window—his object being to frighten them by firing a pistol at them loaded with powder and hard wadding—but could not force up the sash sufficiently to let out his body. In forcing out his right shoulder and bent arm, unfortunately the pistol went off, and the contents hit himself in the centre of the forehead about an inch and three-quarters above the

nasal process of the frontal bone. The young fellow was stunned, fell back and bled very profusely from a large lacerated wound. He recovered consciousness in five to eight minutes, and after this was put to bed and regularly treated for six weeks. The accident occurred in England, and his treatment during the time was conducted there too. During this time the wound suppurated freely, and several small pieces of bone became detached and were extracted from it. Eventually at the end of three months the wound was entirely healed, and the young man went about without the least uneasiness, loss of memory, or suffering of any kind.

Six months after the receipt of the accident symptoms of irritation of the brain began to show and develop themselves—first by peevishness, whereas in all his early life and heretofore his temper was most gentle and loving, so that he was the beloved child of his mother amongst several. He dwelt constantly on the disfigurement occasioned by the accident. As time passed on his irritable symptoms became greatly aggravated, and he seemed to be attracted, affected, and greatly irritated by all kinds of trifling matters. He became gradually more silly, and would pick up useless things from the ground and again cast them away, and so repeat this act over and over again without hesitation; if checked in doing so he would struggle with violence to gain his aim, and then would fling away the useless trophy. Soon after this all his movements would be studied with the greatest carefulness, so as to make no noise, and all the time moving on his tiptoes, but this act was often attended with a jerking motion that appeared quite involuntary, and so, too, he would sometimes violently jerk his arms backwards and forwards. Nine months after the accident he was placed under control in this country, and when only four days from his admission he was seized with hysterical fits and violent crying, ending in falling down and becoming violently agitated, this state subsiding into perfect insensibility. After being roused and recovering, and being lifted up, he would be partially rigid, and if placed recumbent would rest upon his occiput and heels. He frequently got these fits even ten times a day sixteen months after the accident, and after his being under the most judicious care and control in this country.

I saw the patient for the first time in December, 1867, and after hearing his previous history, such as I have related it, I examined with the greatest care the seat of injury—his forehead. The centre of the frontal bone and two-thirds above it were considerably depressed somewhat more than three-quarters of an inch—the integuments covering it being corrugated and irregular from the lacerations inflicted at the time of the accident and from irregularity in the cicatrisation of the part as it passed on to repair. On making pressure on the most depressed part the patient winced, and on deeper pressure being exerted he quickly drew



away his head. He could speak but in monosyllables. He could hold no conversation; he seemed half silly and foolish, and, as I was informed, he got some eight or ten short fits every day. His pupils were dilated, and he complained of constant uneasiness in the forehead. I put him under small doses of mercury and James' powder, prolonged to gentle salivation, and kept it up steadily for six weeks, and it was curious, showing the power of treatment by mercury. The fits all ceased, and he was going on well. At this time I came to the fixed conclusion the pressure was producing its serious consequences on the brain, and as a primary proceeding tried the effects of mercury, with the expressed determination to lift up or take away the depressed frontal bone, if the constitutional treatment was not permanently successful. I did not see the patient for some months after, and then I urged the necessity of trephining the skull. I then met in consultation in the case the late Sir Dominic Corrigan. After considering every feature of the case he agreed with me that the operation was urgently called for. Circumstances interfered with the friends carrying out our suggestion until January 30, 1868. His condition now was considerably worse; he had repeated fits, and pressure on the depressed part caused more marked suffering. On pressing the centre of the depressed bone he would rapidly recede from it, and pressure, if continued, would render him partially insensible. In other respects the young man looked well and in good health, being well nourished from the tender care with which he had been watched by the gentleman to whom his life was entrusted.

On the 30th January, 1868—assisted by Sir Dominic Corrigan, Dr. William Colles, Professor Bevan, and Dr. Lynch—I proceeded to operate. The patient was placed on a high table with a firm mattress on it, and a few hard hair pillows under his head, so as to resist pressure and render it fixed, firm, and steady. A strong light fell upon the forehead, so as to reveal clearly each step in the progress of the operation.

The patient, having some time before taken a little brandy and water, was now placed under the influence of chloroform. In a short time its anæsthetic effects were most gently produced, without the least spasm or struggling or excitement. Standing on the right side of the patient, close up to his head, I made a vertical incision from close to the hair down to about half an inch above the nose, and a second at right angles with it to the same extent, fully three inches; the lines crossed at the most marked portion of the depression at its most tender and sensitive part. The flaps were then rapidly dissected up, though the tissues were all condensed and fibrous, and absolutely the knife grated and its edge was turned as it passed beneath the angles of each flap. Each flap was dissected carefully up to its base down to the periosteum. One large vessel sprung in the angle at the right side; this I ligatured, as the artery was of such capacity as to throw out blood in sufficient quantity

to conceal the further steps of the operation. Though large these flaps, yet I had to carry the vertical incision higher, and to dissect up further the corresponding flaps. On this being accomplished, we had fairly revealed a portion of the frontal bone corresponding to the seat of injury as large as a five-shilling piece. I then scraped away the periosteum from the immediate part surrounding the outside of the depressed part. This left a portion to be removed with the trephine nearly as large as a two-shilling piece—this representing as nearly as possible the size of the crown of the trephine, a very large size, and one that I had made for the operation. I may here mention that I had two crowns made exactly the same size, so that if the teeth of one should be twisted or broken, as I have often seen occur, the second crown could be applied and the operation completed; and this hint I give and would enforce upon all operators, as the fact was demonstrated in this very case. The instrument being prepared with its pin fixed well down, close to, a little above the centre of the most depressed part, it was rotated and made to work, lightly at first, until the saw took its grip and bit well, and was well stricken, fitted in the cut groove, after which the pin was withdrawn, the saw brushed and the channel cleared. Again the instrument was applied, and with weight and steadily, for the bone was as hard as ivory. Again the saw was cleared, the curve cleansed and measured in depth, which was nearly half an inch all round. The instrument was blunted and spoiled, and its teeth forced out of their direct range. I changed the crown of the instrument for a fresh one. The instrument was now applied again, and with a lighter hand, and with greater care and watchfulness against any undue pressure; yet still it worked steadily through dense bone for some time. Now again it was removed from the sulcus, the depth of which was traced round by a cut quill; in depth all round it measured fully three-quarters of an inch. With the greatest carefulness I now introduced the saw, and made it revolve in light half turns with the slightest pressure, yet rapidly, so that it should cut with evenness and decision. I tried now the elevator and strong forceps to lift the piece from its bed, but yet it remained immovable and fixed. A few turns more of the trephine completed its detachment, and the isolated piece was lifted with the greatest gentleness from its bed; it came away from the dura mater without hesitation, and therefore uncompromised by any adhesion. There was no weeping of blood, and therefore the dura mater was quite visible, unruffled on its surface, and perfectly adherent all round the cut margin from where the bone was taken away. On the bone being lifted and pressure removed the brain rose up to more than half an inch. The chloroform acted perfectly up to this time, and the young man was nearly quite sensible. On the most careful examination of the aperture and parts around, it was agreed to by Sir Dominic Corrigan and those assisting that nothing more was required to be done, as

all the depressed part was included in that removed by the crown of the large trephine. No portion beyond that taken away seemed to encroach upon the dome of the cerebral cavity or make pressure on its contained life-giving structures. So, after sponging gently the parts around, the flaps were laid down and each gently sustained by a strap of adhesive plaster, the apices of the flaps not being drawn closely together or confined, in order that all weeping or exudation from the cavity behind might have a ready escape. A couple of folds of lint, soaked in oil, was laid lightly over the aperture, wounds, and dressing to supply moisture, exclude air, and retained in position by a few adhesive straps, avoiding all pressure.

The patient was now quite free from under the influence of chloroform, quite conscious, and not suffering pain. He answered quite rationally a few questions. Ordered mucilaginous drinks acidulated, and a mild sedative at night; heat to his feet.

Portion of Bone removed.—The piece of bone removed by the large trephine was the size mentioned—that of a two-shilling piece. On examination of the specimen it was quite clear that the internal table at the time of the accident was driven back fully half an inch, that the outer table with all external to it was broken up in fragments, many of which, as already stated, were extracted at the time, while many pieces came away in the discharge during the suppurating process. In addition to the depressed bone, the thickness here towards the centre was considerably augmented by the deposition of new bone, making the thickness in all fully three-quarters of an inch; from this central most depressed and thickened part the bone surface gradually fined off to the circumference, so that a little outside the sulcus cut by the trephine it gradually fined away, and there was very little appreciable encroachment on the dome at all. The piece of bone removed was remarkable in many ways. On section it was as hard as ivory in the centre, with close compact bone structure all around. The preparation is in my museum, and presents numerous features of the deepest interest.

January 31st, 10 a.m.—On going into the patient's room I was singularly startled and astonished by his occupation. As he lay in bed, gently reclining on his left side, he was turning over the pages of a picture book, and examining each most inquisitively. I was told by his careful and intelligent attendant, who had been minding the patient ever since he came to Ireland, that he was quite amazed at the questions put by the patient during the night; that he spoke quite rationally, and asked for the urinal, and for drink when he felt thirsty—things that he never did before. On the shutters being opened in the morning, and light let into the room, the patient saw the book on the table, and asked for it. He opened it himself, began to examine the pictures, and even praised them. As long as he had been under care he never noticed books or

ornaments, or anything of the kind, but was stolid, silent, and gloomy. On speaking to the young gentleman he answered me quite rationally, and every question without the least hesitation; he put out his tongue the moment I asked him, and this he never could be got to understand or do before the operation. When at a previous time I wished to see it, it was accomplished only by force. He expressed himself as being quite free from pain. Certainly I was remarkably struck with the little amount of fever or excitement produced by the operation. He slept well, particularly the afterpart of the night. The skin was soft and natural, his pulse only 92; tongue moist, eyes not suffused, no tension or pain about the wound, and no inflammatory discoloration. Ordered beef-tea and bread freely, cooling acidulated drinks, a hot jar constantly to his feet.

February 1st.—He slept well; pulse, 88; skin cool; quite rational; answers all questions; reason perfectly restored. Dressed the wound; watery discharge oozing out; edges of flaps outside their angles all united; free escape towards their apices for all exudations to flow off; parts gently supported with adhesive straps and a few folds of oiled lint; beef-tea and acidulated drinks freely.

February 2nd, 11 a.m.—Slept well, and is quite composed; speaks quite rationally, and remembers and talks of occurrences of yesterday; tongue clean; pulse, 94; skin soft; wound looks well, discharging imperfect pus, free from pain. Readjusted straps and lint soaked in oil; diet as on yesterday; hot jars always kept to feet to act as a derivative; urine passed freely, and bowels gently moved.

February 3rd, 10 a.m.—A little restless in the night, but perfectly conscious, and asks distinctly for all he requires; wound looks very well. Dressed simply; ordered Battley's sedative, chloroform and spiritus ætheris nitrosi—a few doses to give calm and rest; beef-tea for nourishment.

February 4th, 4 p.m.—Had a quiet night, and slept well, and at intervals through the day. Ordered draught as before at bedtime; wound looks admirably, pulse quiet.

February 5th.—Doing favourably in every way.

February 6th.—No change; far more rational, and asks for everything he wishes for or requires.

February 9th.—Going on most favourably in every way; wound filling up and healing without a bad symptom.

February 11th.—Going on well in every respect; quite sensible on the minutest matters, and now begins to talk about home and going there.

February 15th.—The wound healing up most rapidly by granulation. Now the repair was being so rapid that I thought it would be well and safe to apply a blister to the nape of the neck, and keep it open with d'Albayspeyre's plaster; also ordered four grains of Plummer's pill at bedtime and in the morning.

March 20th.—All healed, but very slight depression just where the

flaps sank into the great aperture a little. Not a bad symptom of any kind. Stopped pills, and treated the discharging blister at nape of the neck. Mental capacity greatly improved. Allowed to get up and move gently about the room. It was most remarkable how competent he was to do this after so long and severe a confinement. At this time the results from the operation were splendid. After this he steadily improved both bodily and mentally; he was able to take walking and carriage exercise with great pleasure, and to enter rationally into all amusements with feelings of satisfaction. The changes effected in this case by a bold and judiciously applied surgical operation can never be fully enough appreciated. This fine young man, subjected to violent accident, his skull broken in, total unconsciousness, yet by surgical interference restored to reason; again, after months, secondary mischief, further encroachment and pressure on the brain; interference with its functions; repeated fits, eight and ten in the day; imbecility—imbecility to such an extent that even the warnings of the requirements of nature were unheeded; all interest in objects around dead within him; even food he would not take except by force; and now the marvellous change manifest after lifting up the depressed bone and superadded layers making pressure on the brain; the quiet repose of the patient during the night after the operation; his consciousness perfectly restored in the morning; his minute and searching examination of books at this time, that he never minded, that lay unheeded for many, many months before; his speaking quite sensibly to his attendant; and all these changes wrought, brought about in a few hours after the operation; his gradual and steady amendment up to the healing of the wound; the strengthened memory and power of will day after day becoming more firmly established, until reason ultimately entirely regained and usurped its sway. In a short time after the young gentleman was removed to England, and when I last heard about him, several years afterwards, he was quite well, never had a recurrence of a fit, and was enjoying himself in all the healthy recreations of life.

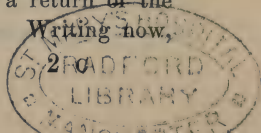
CASE III.—*Depressed Fracture at the lower angle of the Parietal Bone and squamous portion of the Temporal, caused by the kick of a horse; fits, inability to do any work; the seat of injury trephined, and the result perfect recovery; the man has been working steadily with his employer for years and no inconvenience of any kind since the operation.*—Before passing from the subject of trephining the skull for destructive effects resulting after injury—inflicted, it may be, at a time very remote, or even more recently after accident—I shall narrate one case which occurred shortly after that which I have described, the patient being admitted under my care. D. E., aged thirty-six, was admitted to Sir Patrick Dun's Hospital early in June, 1868, by a letter from a most influential country

gentleman. The young man was tall, of powerful build, and always actively employed in the management of a large stud of horses, and most reliable in every way. Two years and a half before his admission, following most carefully his occupation of grooming and watching his horses (hunters particularly), there was one horse so very unmanageable and capricious in temper that no one would dare to approach or clean him up except E. On the date mentioned, E. was cleaning the horse, when he most viciously and suddenly kicked at him when rubbing down one of his hind legs, striking him in the lower part of the left parietal bone where it joins with the squamous portion of the temporal. The man was knocked perfectly insensible, and remained so for a few minutes, after which he recovered consciousness. There was a marked indentation in the part stricken, caused by the cock of the shoe. He was attended after this most assiduously, and all the serious symptoms passed away. He was confined for several weeks to the most rigorous management, and by it the active inflammation at this time was ably met and combated. Time passed on; the man resumed his duties as head-groom. His favourite horses he would look after and manage and even clean himself. He acted in this pleasing way to him for some time, and continued his usual exercises. After about three months employment in this way, he began to feel uncomfortable after stooping even for a short time. By careful watching and having his work done these troublesome symptoms of fulness of his head and unsteadiness passed away. There was during a long time of two years and a half the terrible apprehension of dying suddenly hanging over the man. He had to husband his strength most vigilantly. No stooping or excitement. This he carried out, by the advice which he had obtained, most carefully. However, four months before he came under my care, in trying to brush down the legs of a horse, he fell in a fit, and remained working in it for a considerable time. He after this exercised the greatest caution in stooping; and as long as he did not over-exert himself or stoop, the day passed without a fit. This state continued for more than a week. On the man resuming his business, and stooping to carry out what was required, the fits came on, and then for several days he was attacked two and three and four times, and remained half insensible afterwards for an hour or an hour and a half. There was a repetition of this condition for several days, when his master sent him up to Dublin. I admitted him to Sir Patriek Dun's Hospital at once. Having got from himself, quietly and steadily, the report of his case, as I have just detailed it, I was saddened at seeing so fine and so powerfully-framed a young man, and hearing his own dismal and gloomy story of his state. When those fits, which recently had attacked him on the slightest effort to strive and make exertion, came on he suddenly became confused and lost all consciousness. On carefully examining the

stricken part, just above the left temple, it was quite palpable that about two inches or two inches and a half above the left zygoma, a little above the curved margin of the squamous portion of the temporal bone, there was a well-marked depression—that is, in the lower margin of the parietal bone. When running to its inferior anterior angle the finger pressed upon the deepest part produced uneasiness, and if with still greater force, absolute pain—the patient wincing from the pressure, and, if continued, moving his head away. Now, as I have mentioned, two years and a half had passed by since the reception of the accident—though the man recovered from the primary injury, yet, after some time, uneasiness, giddiness, loss of consciousness, gradually crept on, ending in fits, at first one or two in the day, but afterwards amounting to several in the twenty-four hours, and even increased in frequency up to the date of his admission—I determined on trephining this man, and lifting up the bone where depressed. On June 11th, 1868, I performed the operation in the theatre of the hospital before a large number of surgeons and students. The left side of the head being shaved, the patient was laid upon the operating table, his head being firmly supported on two hard hair-covered chair seats, so that the head could not sink or yield when the requisite pressure and force were applied over the injured part so as to cut out the depressed part. The patient being placed fully under the influence of ether, he was turned on the right side, the head being grasped by an assistant, and so steadied on the solid support beneath. I then made a horizontal incision about three inches long, the centre of it bearing immediately over the most depressed part; two arteries, very large, sprung, but were immediately secured by ligature. I then made a vertical incision about two and a half inches long, crossing the horizontal one in its centre; two thirds of this incision were above the horizontal cut, the lower part not coming down to within an inch of the zygoma. I dissected rapidly up the flaps from their apices to their bases, laying bare the entire depressed part. The integuments were greatly thickened, and, when lifted up, revealed the depressed bone far deeper than was anticipated from earlier examination. I then proceeded to fix the trephine (a large one) by its central pin, and that placed in the very middle of the depression. The bone was very hard here, yet the pin took its hold, and then I steadily worked it all around, and, having made a sufficiently large sulcus to hold the teeth of the instrument, I withdrew the pin, brushed the instrument, and cleaned the track through which it had travelled. Again the instrument was applied for some five or six turns, and the minute examination of the depth cut through, by a piece of quill cut like a toothpick, it being obvious that great caution should be exerted here, as I have often seen the parietal bone very thin in this region, where it joins the squamous portion of the temporal. After a few more turns of the instrument the

bone was free below, but very gentle half-turns of the instrument on the undivided part soon cut it through, and the piece was easily lifted out. The depressed part was quite convex, and measured three quarters of an inch. On taking it away the brain could be seen sunken down considerably. On watching it for three minutes it rose up to the level of the aperture; there was no bleeding. The man now recovered from the ether, and was quite conscious. I brought gently the flaps over the wound, and laid a compress, steadied over all by a few turns of a bandage. He was then carried on a stretcher to his bed, and placed there with hot jars to his feet and sides. On examining the piece of bone removed it was clear upon section that the bone had been broken in pieces by the cock of the horse's shoe, the internal table being broken up and forced in. After this, lymph secretions, terminating in cartilaginous deposits, were superadded, and gradually converted into bone. An encroaching on the brain structure produced pressure slowly at first, ushered in by an occasional fit, and, as matters progressed, by a marked increase in the number of them, and finally by interfering with the man's mental capacity altogether. Nothing could be more satisfactory than the results of the operation so far. At 4 o'clock, p.m., I called to see him, and found him quite sensible and cheerful, he had had a short and refreshing sleep and had taken some chicken broth. At 9 p.m. saw him again; no fit or uneasiness of any kind throughout the day.

June 12th, 9 a.m.—When I arrived at the hospital this morning I was greatly saddened when I heard the man had a fit at 6, and another at 8 o'clock. I was much surprised and gratified when I found out the cause. The small and thickened compress which I placed over the aperture was pressed deeply into the trephine hole from the man's restlessness and turning on his side in sleep; it was pressed in deeply just as much as the piece of bone which had been taken away, and exerted as much pressure from being lain upon; it was driven in, and became dry and hard. After removing this foreign body from the part, the brain rose up again, and perfect consciousness was restored. The flaps were now evenly adjusted, and after this rapidly healed. He gradually grew stronger, he recovered from this without a bad symptom, and no return of fits, so that the pressure exerted on the brain by the hardened compress verified, in a most remarkable way, by its progression and attendant fits, how the thickened bone acted, and was the cause of all the mischief. The man was dismissed cured in five weeks, and returned to the country quite well. In three months after he left the hospital, he called on me and stated from the time he left he returned to his service, and ever since was actively employed about his horses. It gave him no inconvenience to work hard, and he could stoop and do the most violent work without headache or giddiness, and he never had a return of the fits. The man certainly looked the picture of health. Writing now,



some years after the operation, I may state not many months ago I heard about this man, and he still remains in perfect health, never having suffered fits or any inconvenience since the operation.

I could state many other cases of injury inflicted on the skull bearing on the propriety of interference by surgical measures, and in which I have been an active agent, but shall content myself by the publication of these two very remarkable instances, not only carried out to the letter of practical surgery, but also carrying with them a great weight *practically suggestive*.

CASE IV.—*Suicidal Wound of Throat, implicating the Trunk of the Common Carotid; Successfully Ligatured above and below the Wound; Perfect Recovery.*—On the morning of April 6th, 1878, when driving home through Fitzwilliam-place, a gentleman ran up to my carriage, and stated in the greatest alarm that a man had cut his throat just close by in the stable-lane running behind the southern houses in Fitzwilliam-square. I at once jumped out, and brought my box of instruments with me, the gentleman accompanying me. We ran together down the lane, and in the stable-yard corresponding to the second or third house a large number of gentlemen and people were collected. The man had his coat and waistcoat off, and his shirt thrown widely open; he lay extended on the stones, his head being supported by the distinguished physician, Dr. Head, who, living within a few doors of the place, was at once brought over, and saw him. A few moments only had elapsed, when I chanced to be passing, and was called in the manner I have described. Dr. Head at once said to me, "I am afraid he is dead, he has no heart-beat, and I cannot feel his pulse." [I think it right to mention here that I have Dr. Head's permission to mention this fact—his opinion—a most important statement.] The man lay in a large pool of blood, which had flowed from an extensive wound in the lower part of the left side of his neck. I opened my box, and quickly took out knife, forceps, tenaculum, and ligatures. As I watched him very carefully, I perceived the slightest beat, or rather thrill, in the right side of the neck. I at once cleared out the wound, about two inches long, and very deep. From the bottom of this there came up a very feeble wave, or rather weeping, of blood. I enlarged the wound upwards fully three-quarters of an inch, and that deeply, to get at the source from which the blood so feebly welled. On doing so with much care, I discovered the point from which the blood came. I believed the vessel to have been the common carotid, and the outside of its wall was nicked and lacerated by the blunt knife that the man thrust into his neck. The wound was a small one, and its edges lacerated, and so the blood flowed slowly but steadily to almost draining the last drops. I seized the trunk of the artery, and freed it all round by a very few touches both above and below; then the vessel was seized

below the wound; first, Dr. Head held the forceps, and I passed a ligature around, and tied it firmly, and then in a similar manner tied the carotid above the wound. After this not one drop drained into the wound. Dr. Head and myself then forced some whisky and water down the man's throat, and into his stomach, and then through an œsophageal tube. We wrapped him up in blankets, hot bottles, and plenty of horse clothing. We continued rapidly to throw stimulants into his stomach, and frictions with whisky and turpentine over his head and chest, at the same time warm clothing being kept wrapped around him. In about a quarter of an hour the heart-beat became slightly perceptible, and after some minutes later the slightest trickle through the radial artery. Soon his eyelids began to quiver, and shortly after he feebly opened his eyes. There was not the slightest trace of blood from the wound. Thus covered up in as much warmth as could be procured, I had him placed on a police stretcher, and brought along the canal, my hand resting all the time upon his wrist, to the City of Dublin Hospital, the nearest one to me, and where I knew I could at once procure a bed from the distinguished surgeon, Mr. Wheeler, and also procure his able assistance towards resuscitating, and, if possible, saving this wretched man's life. I availed myself of the near position of this hospital as tending to the man's safety, rather than have him conveyed down to my own wards in Sir Patrick Dun's hospital, considerably further away. Immediate action here was everything, and for the preservation of his life everything else should give way. Even when bringing the poor fellow along the canal, we had to force down whisky and water into his stomach several times to revive and keep up the heart's action. On bringing the man to the City of Dublin Hospital, Mr. Wheeler was there, and at once placed a bed at my service for the patient. His name was Patrick C., aged thirty-six years. Every appliance that I could desire, or that was requisite, was at hand—a heated bed, hot jars, &c. On telling Mr. Wheeler the serious nature of the case, its urgency, how that the man was pronounced dead, then showing him the terrible wound in the neck, the severe and difficult operation that I had performed upon him, securing the carotid trunk in the neck above and below the wound that had been inflicted, and how that it had never yielded a drop of blood after, he most thoroughly entered into my views as to the course to be adopted and followed out, so as effectually to resuscitate the man. His state at this time even was very uncertain and bad. No doubt the terrible danger that hung over the man—a repetition of bleeding—was entirely averted, yet from the nervous shock and loss of blood it required the nicest management to restore and bring life about again. Surgeon Wheeler and myself went heartily to our task. We had his chest rubbed rapidly and steadily with stimulants; beef-tea and brandy injected into his stomach, as he felt disinclined to swallow; brandy and

beef-tea, with ether, were thrown up the rectum; hot jars along his sides, limbs, and abdomen. For fully four hours Surgeon Wheeler and myself, with many pupils, worked at the case, when we got the heart to beat steadily, and his pulse to give evidence that its action would be maintained. After about five hours' work at him, we considered he had rallied wonderfully, at the same time that he should be watched by relays of assistants. Lest hæmorrhage should occur from the wound, its edges were drawn gently together by a few straps of adhesive plaster, and the ligatures carefully protected. At night reaction was fully established; wound quite right.

Now that the man is in comparative safety, I shall detail, as told to me, how his life was brought into peril. The coachman and this groom had on many occasions quarrelled; jealousy had crept in as the beginning of the trouble; both men, after some time, became rife for mischief, and this sullenness and bad temper at last culminated and settled into a terrible fight. The coachman took a stable fork and struck the stableman violently with it, and swore he would stab him, when instantly the stableman, a very powerful man, seized a wooden cross-bar of a door, and knocked the coachman insensible; he thought that he had killed him. He then, in his fright and frenzy, thrust a large blunt-bladed pocket knife into the left side of his neck low down, inflicting the wound which I have described as so nearly terminating his existence. He rushed along into the stable-yard and there fell, exhausted from the large loss of blood; he remembered no more afterwards. The noise was heard in the lane, the gate burst open, and the public rushed in, forming the large meeting I have described. From the date of his admission to the City of Dublin Hospital he went on steadily, owing to the clever and assiduous attention bestowed upon him by Surgeon Wheeler and myself. For many days he had to be most vigilantly watched, lest hæmorrhage might again burst out from the neck. An ample supply of nutriment was given by the mouth, as well as beef-tea enemata, with brandy, by the rectum. The wound speedily healed; not one drop of blood escaped after I securely ligatured the large vessel above and below the wound inflicted on its side. The watchfulness over the man for many days was such as I have described in my work on "*Operative Surgery*," when dwelling on suicidal wounds in the throat, and I shall just briefly relate one or two instances here as being so pertinent to the subject, but, before doing so, would transcribe from my work the few following sentences:—When hæmorrhage takes place from arteries divided in the neck, it is always rapid, profuse, and generally continuous to syncope, and often unto death. Should the carotids escape, the fact still maintains, owing to close proximity of the wounded vessel to the parent trunk. Such a condition precludes the attempt at a natural hæmostatic being formed; no coagulum can block the artery, no exuded

fibrin can remain for a moment, the column of blood forced from the heart washes away every obstacle in its course, and it is only when the propelling power is enfeebled, diminished, almost lost, that the bleeding, even for a few moments, is stayed. At this period the surgeon arrives, and how is he to act? Upon his decision now will very often rest the issue of life or death. Search should at once be made for the wounded artery; not for a moment should the patient be lost sight of; every requisition must be had recourse to—the internal administration of stimulants, the repeated application of warm sponges to the wound—until by a fresh flow of blood the source of its origin becomes obvious. Should either of the main trunks be wounded, the artery should be ligatured above and below the wound; if large collateral branches be cut, the same rule should be followed, *if practicable*. I have marked the words “if practicable” in Italics, because sometimes the best efforts of the surgeon will be frustrated in endeavouring to secure the vessel at the wounded part. In such a dilemma he should at once proceed to the common carotid; and the records of surgery, dispassionately viewed, irrespective of theory, will warrant him in the propriety of the practice, and cheer him with the most sanguine expectations of success. At p. 375 in my work on “Operative and Conservative Surgery,” it is further stated:—“There are certain cases where, for instance, the bleeding vessels can be seen and ligatured or checked by the approximation of surfaces with the twisted suture; and when, at the same time, a large trunk is supposed to be injured, and has ceased to give blood, it is better to wait and not at once to operate upon it, for the immediate risk from further loss is, to a *certainty*, checked by the surgical means employed, and the remaining wound can be vigilantly watched and subjected to treatment according to circumstances.”

The following case, taken from my work on “Operative Surgery,” will illustrate my meaning, and is full of interest:—

“J. W., aged twenty-nine years, a young man, was admitted to hospital under my care, October 28, 1863, at half-past eleven o'clock at night, bleeding furiously. The injury was inflicted in the following way:—The patient and a comrade went out together to spend the day; some altercation arose, former disputes embroiled the matter, and finally a personal struggle and a boxing-match, in which the latter was defeated and severely punished. They shortly after separated, but revenge was not to be subdued or lulled to quiet. The beaten man hurried off to the home of an acquaintance—a fellow-tradesman, a shoemaker—and secretly abstracted from his tool-box a long narrow-bladed knife. Armed in this way he quickly followed upon the steps of his adversary, and tracked him to his home. He knocked at the door rather impetuously, when it was opened by his companion of the morning; and,

without a word, he struck him with the knife in the face, laying open the under-lip to the chin; next he thrust the knife through this gap, severing the right cheek, to a great extent, from the lower jaw, and dividing the facial artery. The injured man was so taken by surprise, from the suddenness of the attack, that before he could recover himself he was again violently stabbed in the neck. From this the blood rushed out, and so alarmed was the patient that he grasped the wound and side of the neck, and violently pulled and wrenched it. He never let go his grip, so conscious was he of this dangerous wound. He loudly screamed for help. He was soon assisted, and, in a faint and dying state, was rapidly brought in a cab to hospital. Fortunately for him he had not more than a few hundred yards to travel. I was sent for, and saw him immediately after his admission. He lay almost still and motionless, stretched upon a bed, with the apothecary and resident student endeavouring to control the wounded vessels in the lip and cheek, from which, even in spite of all their efforts, some blood still appeared. The source from which the blood was coming most freely—and it was welling out of the mouth—was the facial artery on the right side, just as it rose above the jaw, in front of the masseter muscles; it was cut from the inside. It was evident, after the lower lip was slit down by a gash, the knife was moved about, accounting for the irregularity of its division, and then thrust between the cheek and bone, towards the right side, severing the cheek from the maxilla and dividing the artery. Besides this, by the vertical incision vessels of considerable magnitude were implicated, and threw out their blood rapidly from the opposite side. The flow from these vessels was partially controlled by the pressure of the assistants. It was at once apparent how great was the quantity of blood lost, for all his clothes were absolutely saturated with it, and the pallid, almost pulseless, condition of the man—for only the feeblest thrill could be discovered in the artery at the wrist—confirmed the impression that he was about to perish from hæmorrhage. The wound in the neck, though not bleeding, yet was conspicuous from its dangerous locality and the swelling around it. To these particulars I shall more earnestly advert just now. The source of bleeding which first demanded attention was the facial artery. I secured it from within, carrying a ligature around each cut end of it with a curved needle fixed in a handle; the ends were tied and all bleeding was arrested from this locality. I next brought the edges of the wound in the lip evenly together, though irregular and jagged as they were, and maintained them so by several points of the twisted suture, the needles being passed close to the mucous membrane. Thus all hæmorrhage was checked. During these proceedings brandy had to be frequently poured down the man's throat, and with much difficulty at first he was got to swallow; a quantity of it with warm water was also thrown up by the

long tube into the large intestines. Its stimulating effects were shortly manifest in his being slowly and gradually returned to consciousness, any further loss of blood being entirely checked. And now as to the wound in the neck. It was not more than three-quarters of an inch in extent, situated in the left side, nearly an inch below the angle of the jaw, and lay directly across the carotid trunk, a little below its bifurcation. The wound was lifted up by an oblong swelling, fully the size of a large walnut, its long axis in the direction of the carotid, and from this wound trickled, ever so tardily, a thin stream of watery blood. I never meddled with this wound; its edges were left apart; there was no pressure put upon it, so as to guard against any deeper bleeding. There was no heave communicated either to the current or the tumour, for as yet the heart's power was not revived, its impulse not restored. The fluid that escaped told its own story; it was the strained blood—that coming in with the last ebb of life. An assistant was left beside the man to watch this wound in particular, and to order, according to directions, the sustenance for his gradual revival.

“The assistant was left to watch the wound, with directions carefully to mark the rising of the heart's action, the force of the pulse, and, on the appearance of red-coloured blood escaping, to place *his finger in the wound*, and so check its flow until I was sent for and arrived. I was very particular in enforcing these directions, for I had no doubt whatever that the carotid was wounded. The wound was small, but the knife was long, narrow-bladed (a worn knife), sharp at the point. It struck immediately over the artery, deep into the neck; on its withdrawal, blood gushed from the wound. The wound was seized, bruised, pulled about with violence, and held so for some minutes, while the man became faint with the rapid loss from other sources. Such a sequence aided the suppression of a further flow from so large a vessel, in conjunction with the torsion and bruising exercised upon it by the determination of the patient. The swelling deep in the neck followed almost instantaneously on the removal of the knife, both in its track and beyond it too. Instruments were all ready to secure the artery above and below the wound on the first recurrence of bleeding.

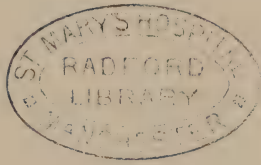
“October 29th, 9 a.m.—The patient has been quiet; pulse very feeble, yet regular; no return of bleeding; serous weeping from the wound in the neck. The patient lies still, motionless, tallow-coloured, with a vacant stare; no expression, no life about him. A favourable heat was developed over his body, and he was perfectly conscious of everything passing around. Ordered sips occasionally of cold beef-tea; and, now that the heart's action was restored sufficiently to sustain life, I considered it judicious neither to increase by food or stimulants the current from it, lest it should be sufficient to overcome the retraction and contraction of the wounded vessel, or wash away the coagulum or reparative

material thrown out for its temporary check or final closure. Still the vigilant assistant kept his watch.

"30th.—To-day the tumour has certainly increased in size; there is a distinct heave in it, a general equable enlargement on close observation, though no distinct bruit could be detected with the stethoscope. The head was well supported, bent forward on the chest, so as to lessen the force of the column of blood sent upwards from the heart. Ice was applied to the tumour, and kept day and night to it; and now, also, opium was freely administered to allay an unaccountable restlessness and anxiety which settled on the man. Were it accompanied by acceleration and throbbing of even the feeble circulation which was developed, I would have anticipated it as the precursor of secondary hæmorrhage, but the attendant circumstances would not warrant such a conclusion. Without any remarkable phenomena the needles were removed, the stitches taken away, and the wounds in the face all healed. The tumour in the neck slowly increased up to the 12th of November, when suddenly its pulsation ceased, and gradually it began and continued to diminish until the 20th, when it remained as a hard elongated deposit, about the size and form of an almond. During all this time, for fourteen days and nights, relays of students watched this man; during all this time he received nutriment only sufficient to support life, until the tumour was consolidated; during all this weary time, day and night, ice was kept applied to the tumour. I must add here, the controlled will and temper of the man aided in a marked way the rigorous treatment to which he was subjected, and tended to the end so strenuously sought after—his perfect recovery." I have frequently seen this young man since, and he remains perfectly well. As warmly as I advocate the practice in certain cases of "not searching by operation for the wounded artery, unless bleeding is going on," the more strenuously would I enforce the propriety of at once cutting down upon the injured vessel if it is of magnitude and if the bleeding is going on, or enlarging the wound so as to secure it. Several cases are related in my work on "Operative Surgery" in support of such practice.

The case of P. C., detailed in the commencement of this paper, is a striking example to show the absolute necessity of doing everything possible, no matter how hopeless a case may appear. The man was subjected to the most rigorous treatment, and which in the end proved beneficial in saving his life. He was dismissed from hospital, cured, May 9, 1878, thirty-three days after his admission.

CASE V.—*Very large Spina Bifida involving the Cervical Region; New Operation; Chemical Analysis of the Fluid, most accurately taken, disproving many of the ideas floating through the class-books.*—M. D., admitted to Sir Patrick Dun's Hospital, October 2nd, 1876, aged ten months. She was the first child, and of apparently healthy parents. She had



MR BUTCHER'S REPORTS ON OPERATIVE SURGERY.

ENORMOUS SPINA BIFIDA.
TREATED BY A NEW OPERATION.

By J. C. O'Leary, Dublin

spina bifida implicating the entire cervical spine from the occiput to the second dorsal vertebra, all the spines and laminae of the vertebrae being absent. The tumour was very large, measuring around its circumference twelve inches and a half, in its transverse axis eight inches three quarters, and in its vertical six inches and a quarter. The tumour was very tense, and covered by quite healthy integuments. Pressure upon it neither emptied it nor scarcely reduced its size at all, and gentle pressure upon it did not stupefy the child in the least. The coverings, as I have mentioned, were thick and healthy. I must digress for a moment, and make the following observations:—In many instances I have cured umbilical hernia in childhood by the following method, which I have carried out years since and up to the present time with unvarying success:—After taking the little tumour, and grasping it steadily with the fingers of the left hand, and then with the right gently pressing back the protruded intestine, at the same time catching up the integuments covering the receding bowel and drawing them out forcibly—then using a long strap of adhesive plaster twelve or eighteen inches long and quarter of an inch wide, steadily applied round the drawn-out coverings of the hernia, first laid on close to the abdomen, and then rolled gently yet firmly along from the abdomen to the very end of the coverings as drawn out—thus stands out a firm hard pedicle, varying from three-quarters of an inch to an inch and a half in length, determined, of course, by the extent of the protrusion. This application being reapplied every second, third, or fourth day—always replaced before the plasters soften or rather relax—so that the bowel should be prevented from protruding again in ever so minor a way until the fresh adjustment had been made. This treatment, if carefully persevered in as I have directed, will effectually cure the hernia in two or three months at furthest. The serous surfaces, applied and held together, become united, the aperture is shut up, and the outside pedicle contracts, shrinks up, and is ultimately taken away altogether. I have had very many instances of success following the mode of treatment I have just alluded to. This same mode of treatment, upon the same reasoning, I applied to this most remarkable and serious case of spina bifida. On the 6th of October I operated after the following manner:—Having placed the child resting on its nurse's shoulder I punctured the most prominent and central portion of the tumour with a fine trochar and canula, and as this hesitated at entrance (though a well-fitted instrument to its canula) I did not use any force or pressure with it, but substituted a grooved needle, which readily passed through the coverings, and as the fluid flowed off very slowly I gradually and steadily caught between my thumb, the index and middle fingers of my left hand, the collapsing sac, and held it guardedly compressed while yet the fluid flowed through the needle. I drew off only two ounces and a half of the fluid; and then, the instrument being

withdrawn, with my right hand I rolled a long narrow strap of adhesive plaster round the collapsed sac between my fingers of the left hand, beginning close to the tumour and firmly and steadily outwards, the strap following closely on my fingers as I withdrew them. Thus the most prominent part of the sac surrounded by those turns of the plaster was perfectly occluded. No uneasiness or suffering was evinced by the child, though the tumour was considerably diminished by this management. Some French wadding was placed over the tumour, so that no hard pressure should be exerted on the plaster, and so irritate the tender skin. The fluid was perfectly pellucid; specific gravity, 1·007. On the 7th and following days no uneasiness, fever, or irritability from the operation. The plaster held its grip well on the portion of the sac enucleated. On the 10th I again drew off two ounces of fluid in a similar way to that described, by the grooved needle entered above the first wound. I wished to be above the centre, no depending point, as I wanted to guard against any fluid escaping after I drew off what I thought sufficient. After the discharge of the fluid the tumour was greatly diminished in size, and I applied the plaster as before, constricting far more the tumour and materially reducing it, certainly by less than a third of its original bulk. The fluid drawn off was two ounces; it was slightly turbid, and minutely tested for sugar. This point closely concerned a great surgical problem, for it had been stated as a diagnostic mark of water welling from the ear in fracture of the base of the skull that sugar is present in it, which at once confirms the accuracy of the diagnosis of fracture. To this point I shall refer again. On the 14th the little child showed no distress or uneasiness after the operation two days before. She took the breast as usual, and slept quietly, and when awake was as lively as before any operative interference. The plaster held its grip and place undisturbed, a very large part of the sac being tightly embraced. The mother had now to go to the country, some of her children being very ill, and she would take the infant with her, promising to come back in a few days. This, however, never happened, as the infant took scarlatina in the country and died. I have no doubt whatever, had the child lived, and had the same treatment been carefully carried out, from the great diminution effected in so short a time, that the operation would have been successful.

In this case there are a great many points of interest. First, the enormous size of the tumour, embracing the entire cervical region, and even beyond, this position being the rarest of all for its presence; yet instances are mentioned by Cruveilhier and others, but not one so large as mine. The operation which I planned and successfully employed is, I think, worthy of a trial. Mr. Gross, in his splendid work on "*Operative Surgery*," thus speaks

of the efforts made to cure spina bifida:—"The treatment of bifid spine is anything but satisfactory; for modern science, while it has been so suggestive of improvement in almost every other branch of surgery, has made no additions, even of a plausible nature, to what was known respecting the management of this malformation a quarter of a century ago." ^a

I can with the greatest certainty and confidence recommend to the profession the operation the steps of which I have endeavoured to describe, and have no doubt that in other hands, when carefully carried out, they will be equally promising, as in the embarrassing case which illustrates my views.

On October 6th, and subsequent days, a most careful and close analysis of the fluid drawn off was made in the laboratory of Trinity College Medical School with the following results:—

Specific gravity at 60° F.,	-	-	-	1007·58
Albumen,	-	-	-	a trace.
Chlorides,	-	-	-	abundant.
Sulphates,	-	-	-	a trace (minute).
Ammonia (free),	-	-	-	none.
Alkaline Phosphates	-	-	-	a trace.

No sugar, either by copper or saccharimeter tests. This point was determined both before and after the separation of the albumen from its fluid.

The chlorides, estimated as chloride of sodium, were found to be 63·4 of the entire solid matter.

The fluid drawn subsequently by grooved needle gave exactly similar results, except that a small amount of blood escaping along the needle gave a small coagulum, which separated from the fluid.

I lay great stress upon the fact that no sugar was found, though most carefully looked for both by the copper test and by the action on the plane of polarisation of light. The polariscopic examination was made by Professor Jellet, now Provost of Trinity College, Dublin. This last point was looked to with the greatest care, as the presence of sugar, as I have before stated, is asserted to be a chemical test of real application in cases of injury of the head when the cerebro-spinal fluid is observed to escape. I quite agree with Roberts that the fluid that escapes in those cases of fracture of the base of the skull, at least in most cases, consists of the cerebro-spinal fluid, because there is no other source within

^a Gross. System of Surgery. Vol. II., p. 187.

the skull than the pia mater which can yield with equal rapidity so large a quantity of fluid; experiments on animals having shown that the cerebro-spinal fluid is rapidly reproduced after its evacuation. The quantity of fluid that is thus discharged is always very considerable, the pillow usually becoming soaked by it. It is often necessary to keep a piece of sponge or a pledget of lint against the ear in order to prevent the fluid from wetting the patient as it trickles out; and if a cup be so placed as to collect it, an ounce or two will speedily accumulate. Langier states that he has seen a tumblerful discharged in a short time, and as much as twenty ounces have been known to be poured out in three days. The flow is usually continuous for several days, and then ceases. In order that the fluid be discharged the membranes of the brain must have been torn opposite the outlet by which it is poured forth. This has actually been ascertained to be the case by carefully conducted dissections. When it is discharged through the ear the laceration, as Bernard has remarked, must have extended through the *cul-de-sac* of the arachnoid, which is prolonged along the auditory nerve in the internal auditory canal. C. Bernard states that sugar is contained in it, and forms a sure test and proof that may be relied upon as to the certainty of fracture. Now the cerebro-spinal fluid drawn off from the spinal tumour, and of which I have given the most strict analysis, did not yield on the most delicate tests the least trace or evidence of sugar.

In many of those cases of spina bifida, related by various authors, neither the cord nor the nerves had any connexion with the sac—these parts followed their usual course down the spinal canal; but in far the greater number of cases that have been placed on record the nerves presented some kind of connexion with the sac. Hewitt states that of twenty preparations of spina bifida occupying the lumbo-sacral region, which he examined in various collections, he found but one in which the nerves were not connected with the sac, or if so, their functions at least were not interfered with by the gentle treatment pursued. I believe myself the implication of the nerves with the sac would be far more likely to occur when the tumour sprung from the lumbo-sacral spine than when it did from the cervical region.

CASE VI.—*Extensive Disease of the Lower End of the Thigh-bone; large projecting piece threatening the Popliteal Vessels; the entire cut out by a most formidable operation; Perfect Recovery, with entire use of the limb.*—The following case is one of the deepest interest, involving the life of a

fine young man; and he was dying when he came under my care. He is, I am most happy to say, perfectly well, and has been obtaining university honours. I have a letter from his father, and from which I extract the following:—

“My son, John H. R. G——, on the 25th March, 1876, sprained his leg (as we considered at the time). A doctor saw him next day, and ordered a liniment, but said at the same time he was suffering from an attack of jaundice, and treated him accordingly. The next week he called in a doctor to see the leg. They both examined it, and the result of their conference they agreed to, and ordered a stronger liniment; in a few days applied poultices, afterwards leeches and fly blisters, and returned again to poulticing the swollen part in the inside of the joint. The discharge was matter and a quantity of water. After some time an abscess formed on the outside of the joint, and was in due time lanced by the same doctor. In a few weeks another followed, and broke of itself, from which time, for more than a year, not less than a dozen formed and broke in succession. Several small particles of bone came away during the first two years; since then he has had no abscesses, nor has any more bone appeared. Shortly after this great constitutional disturbance, increased discharge and feverish symptoms; chest also very uncomfortable.”

On the 6th November, 1880, I was called upon to see this young gentleman by Dr. Nolan. I was at once struck by his emaciated and enfeebled state, showing there was some marked disturbance interfering with nutrition, health, and life. I was told a long history—how his right knee-joint was injured, how it was twisted, and how his sufferings after could not be described; the abscesses and the openings about the joint I have just adverted to; and all this sad history carried on for years—I was told, I think, nearly three years—all going still to the bad; then I was called in to see this young man. After examining very carefully, I found he was greatly depressed and weakened from the persistent pains around the knee-joint, constant stricture in it preventing all sleep, and latterly accompanied by profuse perspirations. His pulse was at this time 120, and his temperature ranging up to 100°. He was sadly reduced, and feeble as a child. After examining his constitutional condition, I then carefully examined his knee; there were two openings—one on either side of the joint; the one on the inside was of long standing, while the external one was made by the doctor who attended him. On passing carefully a probe into the external aperture it traversed into the popliteal space, and detected in its whole travels diseased bone (carious), and on passing the probe through the opening on the inside of the joint the same condition was clearly revealed. By this examination I clearly detected a long, sharp piece of the femur, sticking down towards the popliteal vessels. This condition made me

exceedingly anxious as to the necessity and propriety of immediate interference. I explained to his father my views upon the case—told him of the extreme disease in the lower end of the femur, threatening the implication and the destruction of the knee-joint, not only that remotely, but immediately; the danger that imminently hung over the large vessels (the popliteal artery) in the ham, from close proximity to the sharp solid piece of bone that hung down in this direction. I have frequently before this been called upon to remove sequestra and portions of bone protruding from their natural site, and even set loose in this space, always threatening the greatest danger by inflicting mischief on the large vessels. In my work on “Operative Surgery” some interesting cases bearing on this point are very carefully related. Latterly the disease progressed so rapidly, and the constitutional symptoms assumed so severe a type, that the lungs were threatened—in fact, there was slight dulness in the right lung and upper part of the left lung, in their apices, with distressing cough, so that I looked upon the knee affection as the primary source of the fatal mischief which threatened the chest. After careful thought and consideration I determined on cutting out the entire carious portion of the lower end of the femur, as well as the sharp protecting piece which threatened the life of the popliteal vessels. Having examined with the greatest carefulness into every part of this very serious case and considered it in all its bearing, and having made up my mind as to the course to be pursued, I brought in my very able friend, Surgeon Wheeler, and expressed my views to him, and how my efforts were to be carried out. A few days were passed over in preparing the patient for this very formidable ordeal.

On the 20th November, 1880, we determined on this operation. Dr. Nolan, who watched over the case from the very first, administered the ether; an assistant was there to hold and control the patient. Surgeon Wheeler ably assisted me in the different steps of this difficult and dangerous operation. The patient being placed under the full and steady action of ether, the limb extended, I made an incision fully five or six inches long on the outside of the lower part of the femur—the end of it terminating about two inches above the angle of flexure—right down to the bone, but its whole line a little in front of the course of the popliteal vessels; this incision being carried deeper the bone was reached, and then the handle of the knife was used to detach the vessels and all soft parts backwards, so as to arrive at the carious bone. The gouge, the chisel, and the mallet were had recourse to, to clear away all the diseased bone. Copper spatulæ were placed between the vessels, together with the soft parts and the bone, so that they were carefully drawn backwards, free from all danger. The work with the gouge was most satisfactory and very remarkable; large quantities of the carious bone was safely cut away with it, and I cannot give this instrument too

much praise. If steadily worked and well handled, with the index-finger of the right hand up to its curved edges, rigidly fixed then, so that the instrument shall not slip, it will do wonderful work and give greater satisfaction than any other tool that can be applied. The gouges I use, some of them, are much larger than those in the operating cases for surgeons, as sold by cutlers.

The cutting force of the gouge in a resolute hand can be made enormous, and its delicate working, held as I have described, may be most gentle, and will effectually remove the smallest projecting pieces of bone that must be taken away. The leg throughout this serious work was slightly flexed, and then more, so as to relax the soft parts and give a larger chamber to work within. The sharp projecting piece was chipped away. Now, this work was all very difficult, owing to the way in which the large vessels lay so closely approximated to the diseased bone; yet the entire diseased bone was cut out down to the lowest point threatening the knee-joint. The entire chamber from whence the diseased bone was removed was quite smooth and pronounced healthy in every way. The bleeding during the operation was very trifling, though the incisions were extensive. The entire wounded surfaces were freely brushed over with a very strong solution of chloride of zinc (my usual practice), and then the cavity was filled by long strips of lint, soaked in oil, containing two drachms of cajeput oil and one drachm of watery extract of opium to the six ounces. The limb was then placed upon a padded splint, the concavity of the ham being well filled up. The splint extended from the tuberosity of the ischium to the centre of the lower third of the leg, and was maintained in its position by being bandaged from below upwards with a gentle steady pressure, which maintained and quieted the spasmodic tendency beginning to be shown in the muscles of the thigh. The young man quickly rallied from the effects of the ether, and stated he felt no pain at any time during the operation.

In an hour afterwards a sedative draught was given, and he fell into a quiet sleep. At 4 o'clock I visited him; there was no blood weeping from the wound, and he had no pain. Visited again at 10 o'clock, and he was very quiet and free from pain. Repeated his sedative draught. He had taken some beef-tea twice through the day—to be given again in the night when awake. A whole week passed over without an unfavourable symptom. The dressings were carefully applied by myself; a healthy purulent discharge was quickly set up, quite healthy in character. The third day after the operation the pulse came down fifteen beats, his temperature fell two degrees to normal, and on the fifth night after the operation all sweats ceased—at the end of a fortnight improvement progressing in every way, and now, too, his cough ceased to be so troublesome. At the end of a month his cough ceased altogether,

and distress in the chest was nearly gone; dulness in the apices of the lungs clearing rapidly away.

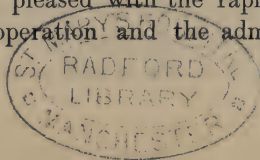
For many days after he was carefully watched and dressed, and all went on most favourably. Still the same restrictions as to any attempt at motion. The wound discharged freely, as it ought, a fair quantity of healthy pus. Nothing occurred requiring special notice for two months. The discharge gradually diminished; there was no pain, no restless nights; the pulse quiet at its normal range of 78. All the lymph and thickening material for bone thrown in front of the lower part of the femur was steadily and gradually diminished; the same careful, cautious dressing of the wound persisted in for several weeks. The same cautious local management of the case was carried out steadily by myself, as well as constitutional treatment, meeting every trouble that presented itself; and now, before sending him to Bray in May for change of air, to give more oxygen to his system, more tone and life, I wish to state at this time that his constitutional condition was remarkably improved in every way, and this state, I think, may be taken as the index to his local condition. From the time of his change to the seaside his appetite increased, his sleep became steadier and more refreshing. The pains in the limb were never referred to now; there was scarcely any discharge from the wound. He was not more than a fortnight at this lovely and salutary place than he was remarkably improved in vigour, strength, and cheerfulness. In a few weeks after this there was scarcely a drop of discharge from the wound, and he could move about quite independently on crutches, and even placing some weight on the limb. He returned from Bray so much improved in strength and in the power of the limb that he can walk without sticks or crutches, and now (Jan. 3rd, 1881) he has walked into my study without the slightest halt and without any stick or support. There is not the slightest halt in his gait; he is strong, well developed, and well nourished; there is no discharge; the limb bends far more freely, and he can walk quite independently for a long time. He is now enabled to prosecute all his studies without interruption, and he feels set free and released from all fear of injuring the limb. He has recently been examined by Surgeon Wheeler, who was astonished at the result of this case in such a short period of time.

This case I look upon as a very remarkable one, rescued from death by very bold and determined treatment—conservative surgery.

Before closing this paper on remarkable cases in operative surgery, I would wish to give the history of two cases of the very worst forms of hare-lip—one of the double form, with cleft palate hard and soft, with the most unnatural development of the

vomer and intermaxillary bones, standing straight forward from the very tip of the nose, the entire nose strangely developed in size, and thrust over to the left side. The second case has likewise been selected from amongst many as an example of single form on the left side through hard and soft palate, very wide in front, the gap freely admitting the thumb, and this space being due to the remarkable way in which the united ossa incisiva attached to the right superior maxillary bone stood prominently, almost straight, forward, and even above and to the right of the tip of the nose; the right ala was curved and expanded upwards and outwards, while the left ala was corrugated, depressed, and dragged down to the undeveloped left superior maxillary bone. In my work on "Operative Surgery" I have dwelt largely on the subject of hare-lip, and illustrated my views about its treatment in all the most embarrassing cases to be met with. I likewise, in *The Dublin Journal of Medical Science* for 1877, described two rare and terrible cases of double complicated hare-lip in mother and child, each accompanied by the most horrid deformity. There is no such instance on record as the mother and child presenting themselves for operation at the same time for the same frightful deformity. The cases are beautifully and most accurately illustrated, both before and after the operation, by lithographs traced from photographs. The beautiful plates represent the front view of the mother and child, the child sitting in his mother's lap, and so also a plate of the side view of the mother and child before the operation. The next plate, subjected to the same ordeal, represents a front view of the mother and child in the same position as taken at first after the operation, and another plate shows the side view of the patients after the operation. They are perfect, I think, in every way.

I could not refrain from bringing forward these cases, each being so typical of its class. There is another reason too which actuates me to do so, and that is to draw attention to the admirable paper on this subject by Surgeon Wheeler, published recently in *The Dublin Journal of Medical Science*—a paper which, I think, reflects the greatest credit upon him as a most accomplished surgeon. In the City of Dublin Hospital most of his numerous cases were operated upon. I had the pleasure of seeing him execute many of them, and was always pleased with the rapidity and steadiness which completed each operation and the admirable results following.



CASE VII.—*Double Complicated Hare-lip, with double cleft palate hard and soft; projecting intermaxillary bones united in a solid mass, the vomer being greatly thickened and expanded from the point of their attachment—the entire standing prominently forward, with four crooked teeth; the nose was thrust entirely over to the left side, its massive apex pointing more remarkably in that direction, while the alæ were spread out quite horizontally, so that a more hideous arrangement could not be depicted; Cured without deformity.*—E. W., aged six years, the daughter of healthy and well-looking parents, without the least irregularity either in mouth or lips. This infant was the first child; three have been born since, all healthy and no mark whatever. I had seen the child when an infant, and several times at intervals of some months after. From the first it was such a puny little creature, with so little vitality about it, that on several occasions, though severely pressed, I declined to operate until the child should gain age and strength, as the operation should be a most severe one, owing to the extensive and horrible deformity present. For twelve months and up to the present time, November, 1878, the child was kept near the seaside, and most carefully fed and attended to, and so the child steadily improved, and now it was brought up from the country for my opinion. I considered it in a sufficiently healthy and strong state for the operation. The fearful amount of deformity in this case exceeded anything almost that I had ever seen; the superior maxillary bones on either side were very imperfectly developed, while the entire nasal organ was enormously enlarged; the soft and hard palates were altogether absent, and the vomer was inordinately developed, proceeding from behind, about its normal size, and thickening for about half an inch, it began gradually and rapidly to increase its dimensions, and, as it approached the intermaxillary bones, was fully half an inch thick, forming a great unsightly buttress, on the front of which were impacted and grown into the two maxillary bones, standing prominently forwards, almost directly forwards. These bones were unnaturally large and covered with thickened gum deposits on either side, the entire piece standing almost straight out and an inch across, while its depth was three-quarters of an inch; four small teeth stuck directly forwards out of this protruding mass. The depth of the vomer in front, where fused into this mass, the mass being partially covered by a small piece of integument, was quite unnatural, being just an inch, while its massive thickness was, as already mentioned, inordinately increased. This osseous arrangement made the whole nose stand forward more than a half greater than it ought to be, while the whole organ, septum and intermaxillary bones, were united somewhat to the left side. The alæ nasi were much longer than natural, dragged outwards almost horizontally, flattened and matted, far away from each other, into the undeveloped superior maxillary bones. At the period of life of this patient with double complicated



Fig 2.



Fig 1. before Operation.

Fig 2. after Operation.

MR BUTCHER'S REPORTS ON OPERATIVE SURGERY.

DOUBLE COMPLICATED HAIR-LIP.

hair-lip the tongue is always greatly enlarged; so here, the organ was fully half again its natural size—this increase of size, this enlargement, adds greatly to the difficulty of getting safe union after operation, as it becomes troublesome, not only by its bulk and motions, but by its determined pressure forwards. Considering all the points in connexion with this very serious case, the hideous deformity and the magnitude of the central mass, the removal of it, to a certain extent, being absolutely essential to allow of the formation of a septum between the nostrils, the formation of this and the closing up of the great gap in front, created such an amount of work—work that should be quickly done—as to make the surgeon very anxious and reliant on himself in undertaking so arduous a task. I shall now proceed to describe the several steps of the operation:—

On November 8th (Friday), 1878, the child was operated on after the following manner, and more assistants were required than usual for the operation of hare-lip, owing to the advanced age of the child and the numerous complications which had to be dealt with:—The child being rolled up in a sheet, mummy-like, the arms steadily secured downwards, the feet also steadily bound together, was given into the arms of a strong young man, sitting in a high chair, with the patient's head resting on his left shoulder. The head was then steadied in this position by a second assistant standing behind the patient; a third assistant stood at my right side to compress vessels, &c. Standing in front of the patient I passed a tenaculum into the central fleshy flap partially covering the projecting inter-maxillary mass, a little to the right side of the mesial line, and dissected it up rapidly *from the bones far back*, fully an inch and a half. I proceeded next to deal with the osseous projecting mass, clipped it across high up at its most projecting part, and endeavoured to force it back. This not being readily accomplished, with a narrow-bladed forceps I quickly clipped from beneath a large triangular piece, base below; this facilitated the forcing back of the most projecting mass; but, even when so satisfactorily forced back, the posterior prominence was still too great. Cut the thickened septum far behind; the hæmorrhage was so sharp that I thrust a couple of reddened wires into the chief vessels supplying this central osseous mass; but this did not quickly arrest the loss of blood, which was rapid, so I removed the osseous part rapidly with the bone forceps, retaining as much as possible behind to support the central septum formed from the soft part held over the tip of the nose carefully preserved—the thermo-cautery proved effectual in arresting any further flow. A tenaculum was then inserted into the left half of the cleft lip where its red margin curved into the lip—the piece well held up—and it and the left ala carefully detached from the maxillary bone over as far as the infra-orbital canal, and high up, so that when the part was drawn from left to right it readily yielded and came across to what might

be considered the desired point. I next inserted the tenaculum through the right side of the lip, and at a similar point to that effected on the left, and so rapidly dissected up the lip and ala from the maxillary bone to a similar distance as that described on the left side; the detached lip and ala were drawn from right to left, and it was proved quite sufficient for juxtaposition with the opposite; pressure was carefully kept on the detached lip on either side to prevent bleeding. All being well freed from osseous connexions I held up the tenaculum through the left half; I applied my curved scissors closely outside the tenaculum, and, pressing it well up to the ala nasi within the nose, cut out the tenaculum with the transfixed part. In a similar way the right portion of the lip was dealt with. An effort was next made to bring the portions of the lip, right and left, together with the alæ nasi forwards, when it was found that owing to endeavouring to preserve too much of the central osseous part (so essential) the soft parts would not come together without an unnatural strain; therefore I had to resort to the removal of more of the central piece, though influenced by the most determined conservative measures. The hæmorrhage, which again threatened, had to be arrested by the application of the thermo-cautery; the bleeding ceased, and now the parts could come well up and together and meet the central piece, preserved and pared for the septum. A long fine needle was then passed from about a quarter of an inch external to the left ala nasi, and made to travel from left to right, about an eighth of an inch above its curved margin; appearing on the inside, it was made to go through the septal soft triangular piece about its middle (the point of the nose being depressed to facilitate this result, and held so), the needle passing through was forced through the right ala nasi and beyond it about a quarter of an inch through the cheek, corresponding almost exactly to the point of entrance of the needle on the left side; so the needle rested very evenly across, fulfilling every object, bringing up the nose and maintaining the central septum piece in perfect adjustment, on the cheeks being forced forwards. The silk thread was then thrown carefully around the needle in the figure of 8 form—no dragging of the cord, but the soft parts well pressed forward, evenly approximated, and then the cord cast round to prevent the slightest separation or retraction. Thus all these complicated cut surfaces were held accurately in contact and without any biting constriction. A similar needle to the first was now introduced about three quarters of an inch external to the cut surface on the left side, and just at the junction of the red line of the lip and skin, and made to travel from left to right deep through the muscular structure, close to the mucous membrane, and on appearing was carried across, striking the right half exactly at a corresponding point and making its appearance on the right side through the cheek and at a like distance

from the cut margin to that on the right side. On pressing forward the cheeks the surfaces readily came into the closest contact—for there was no restraint or tightness in this direction at all—the red margins of the lip so pressed forward most accurately corresponded; and then I cast the silk cord (in figure of 8) from side to side with very gentle pressure, each turn made to lie very evenly, until the entire wound through the red part of the lip was all covered. A third needle was inserted with the same precautions as the previous ones, away from the red margins a long way, deeply through the tip, close to the mucous membrane, so as to bring the part throughout its whole depth into perfect apposition, the cord being passed around with the same gentle care as the former ones. The parts lay most beautifully together. During these several steps of this complicated operation the child had to be frequently fed with teaspoonfuls of brandy and water. The ends of the needles were next clipped off with the pliers. A narrow strap of plaster was placed on the tip of the nose, and fastened down after the nose was virtually twisted straight from left to right, both to sustain it straight and also to take traction off the central piece. This method I have often adopted and before advised. The wide straps of plaster hollowed out for the chin, and which I have employed for years to keep the cheeks forward and take tension off the needles, were next applied and acted with their usual efficiency. The mode of the application of the plaster which I have over and over laid down in my “Operative Surgery” when dealing with the subject of hare-lip, is very simple and most effective. The operation finished, the child was now ordered, according to my usual practice, small doses of laudanum, which quickly quieted her restlessness and irritation—in fact, the infant was half narcotised. The little creature, shortly after awaking, took some warm milk, and again went off quietly to sleep. It is not necessary to particularise the management of the child up to the morning of the 11th. Up to this time she was kept gently under the influence of opium, and took abundant quantities of milk, chicken broth, and rusks grated in it. On the 12th, at 11 o'clock a.m., I removed the needles, having at 10 o'clock given nearly a double dose of the opium mixture, so as to thoroughly quiet the child before putting her to pain. The child was very steadily held resting on the nurse's left shoulder, while the cheeks were gently pressed forwards. I then extracted the upper needle first, catching it in a forceps, having previously greased its ends, and drawing it from left to right, while the index finger of my left hand pressed gently in the contrary direction to which the needle was travelling, and so by this arrangement guarding against any traction here made on the wound. In a similar way the needle upon the red margin was removed, and so also the middle one. When removed, the gentlest touch took away the silk cords which remained lightly glued to the lip. These being very hard I removed them, and then the perfect nature of the operation was

all revealed. The nose and septum were perfect, and the incision wounds all thoroughly healed, the lateral sides of the lip most perfectly to the lowest border of the red margin, while the V-shaped piece to make the septum was united with the lateral portions of the lip to its very smallest point. Nothing could be more perfect than the way in which nature responded to all my efforts to secure union throughout. Adhesive straps, very narrow, were then most carefully applied, the cheeks being well pushed forwards, so as to restrain any traction on the recently-united parts; the wide piece of plaster curved under the chin and carried up to the temples, and so fastened as to prevent the slightest retraction of the cheeks, and so maintaining the newly-united parts in position without the slightest drag upon them. A strap was also placed from the forehead down along the nose, so as to keep its point down, and so resist the dragging up of the central V-piece of the septum. From this the child gradually began to gain strength; beef-tea and chicken broth, with bread crushed up in them, were constantly given, and milk in abundance. In a fortnight after the operation all plasters and straps were thrown aside, and really the condition of the child at this time was everything that could be desired. There was no deformity now. The nose was well up and straight in its position, and the union perfect throughout. No one, as the child's father and mother said, could possibly recognise the child, or believe that such a change could be effected. There is one very important point I shall mention:—Whereas, before the operation, the child made efforts to speak, uttering unnatural guttural sounds, a fortnight after the operation she could speak many words quite distinctly, and in a month could express herself quite intelligibly. The child returned now to the country, and rapidly recovered strength and health after this formidable operation. In eight months after the operation I saw the little child, and scarcely anyone could believe she was the frightfully deformed creature she had been (so truthfully depicted in the picture) before the operation. She was now, eight months after the operation, really a very pretty child, and the marks of the operation were scarcely to be seen, standing at a short distance from her, and the regularity and evenness of her face mainly contributed to this result.

Case VIII.—*Horrid Complicated Single Hare-lip; single fissure on the left side, through hard and soft palate, very wide in front, the gap freely admitting the thumb, and this space being due to the remarkable way in which the united ossa incisiva attached to the right superior maxillary bone stood prominently, almost straight, forward and even above and to the right of the tip of the nose; Cured without deformity.*—J. C., aged one year and nine months, first child, born with horrid complicated hare-lip, right maxilla projecting with intermaxillary bones almost prominently forwards; the left maxilla scarcely developed at all—so leaving an

Fig 1



Fig 2

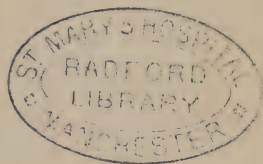


Fig 1 before Operation.

Fig 2 after Operation.

MR BUTCHER'S REPORTS ON OPERATIVE SURGERY.

VERY BAD SERIOUSLY COMPLICATED SINGLE HAIR-LIP.

enormous gap, the palate being cleft through, hard and soft. The nose, owing to this arrangement, was entirely dragged and flattened on the left side—spread out even on the cheek. The gap in the hard palate was greater than I have usually seen, where only one fissure existed, fully admitting the thumb into it. The whole emaciated and attenuated condition of the little creature was most pitiable when I saw it, four or five weeks after birth—the parents, as usual in such terrible and revolting cases, at once seeking for some operative interference to humanise the deformity. When I saw the child, at this early period after birth, it was barely existing, and the idea of any operation then was out of the question, though I am partial to and sustain the good results of early operation *when practicable*; but the practical surgeon can follow no rule in this respect. It may be very gratifying to parents to try and have an operation performed, hoping always that it must succeed, but the surgeon who has largely dealt in such matters knows well the risks of failure when life is scarcely exerting its proper influences over the nutriment, growth, and development of the little child. At this time I dissuaded the parents from any operation, and now the child has been presented to me again for operation several times since I first saw it and was consulted as to the propriety of operating. On every occasion I advised putting off the time until the little creature gained strength, and now—February 4th—I have seen him again, and he has grown comparatively strong and healthy, though, as contrasted with other children of his age, he must be markedly small, thin, and puny. The face is really fearfully distorted, though there is no second fissure; the intermaxillary bone attached to the right supermaxillary has come to stand even far more prominently forward as they have been developed, and the effect thereby is far more hideous than when the child was a little infant—the first tooth protruding straight forwards, increasing this horrid deformity; and the constant thrusting of the tongue by the child out through the wide gap makes the whole appearance disgusting. The child being now two years old and in good health, I determined on operating upon him.

On Feb. 5, 1880, at 11 a.m., I operated upon him, after the following manner, assisted by Dr. Denham and Surgeon Wheeler:—The child being rolled up in a sheet, mummy-ways, was placed in the lap of a nurse, his head resting well up on her chest; an assistant standing behind steadied the head immovably in this position. I first thrust a tenaculum through the right half of the lip, just at the margin of the red border at its outer part, when, being connected with the white skin, I gave it to an assistant to hold; in a similar way I trans-fixed with a second tenaculum the left border of the lip, sunk down, depressed, and pinned in tightly to the undeveloped left maxilla, at a similar position to that on the right side—that is, where the curve ceased

and the red lip joined with the white skin. Yet here the tenaculum was inserted steadily and accurately. This too was placed in the hands of an assistant. I now took the tenaculum on the right side from the assistant, and, having made traction forwards and outwards, revealed the mucous membrane, binding the lip to the jawbone and ossa incisiva. With a sharp narrow-bladed scalpel the soft parts were rapidly dissected up from the bones and very extensively outwards, so as to allow the lip great freedom, and so expose extensively the projecting ossa intermaxillaria and the anterior edge of the perfectly developed superior maxilla. I next, with my lateral-bladed forceps, clipped across the bony projecting arch formed by the maxillary and united intermaxillary bones just at this junction. The instrument divided their junction a little above the alveolar range. I next cut, with the vertical-cutting forceps, the pedicle connecting this prominent piece with the vomer. The projecting bony piece thus cut externally and above—the soft parts all around it uninjured owing to the construction of the forceps—was then caught in a pliers, the jaws of which were covered with two layers of chamois leather so as to prevent bruising or excoriation, was bent back and forced from right to left into the gap, thus making the alveolar range perfect in form. The force brought to bear by the pliers was so steadily applied and as close as possible to the osseous divisions, that the piece went back gently, without starting from their bed either of the pieces or the teeth. I then seized the tenaculum in the right part of the lip, and fixed its connexion to the maxillary considerably backward, satisfying myself that it would come well over to the left side, and without much traction. This being satisfactorily arrived at, I then took hold of the tenaculum inserted in the left half of the lip and lifted it upwards and outwards. It was necessary here to make a very extensive dissection. The left superior maxilla was so miserably developed that the lip was tied back more than a quarter of an inch, and the left ala of the nose completely flattened, spread out quite with an inclination *downwards* and *outwards*, and firmly bound to the bone. The dissecting up of the lip was very troublesome, so as to free it sufficiently to come forwards towards the right side, and the dissection of the spread out nostril from the bone required much caution, the division requiring to be effected close up to the inner angle of the eye. The parts being sufficiently freed they were gently drawn over to meet those on the right side, and were found admirably adapted for apposition with the opposite side.

I then took in my left hand the tenaculum, thrust through the right side of the lip, drew it steadily forwards and a little inwards, making it quite tense. I then passed the curved scissors that I am in the habit of using beneath my left hand, laying the instrument with its curve towards the mesial line upon the lip, close to the outer surface of the inserted

tenaculum, pressing, at the same time, the instrument well up, so that its points should be within the nostril when the division of the lip was accomplished. The instrument being thus steadied in its proper site was firmly and rapidly closed, dividing at one stroke all that was required to be taken away, and thus cutting out the tenaculum with the soft parts. In a similar way I lifted upward and a little inwards the left tenaculum, so making tense the left portion of the lip; to this, also, the curved scissors was applied at the outer surface of the tenaculum, and the soft parts cut away up into the nostrils. There was scarcely any blood lost, pressure being effectually made on the facial artery on either side. The two concave surfaces, when thus approximated, fitted together most evenly from the nostril to the lower edge of the red border. The first needle I inserted a quarter of an inch external to the left ala of the nose, and on a line with its lower edge. This was made to travel from left to right through the thickness of the lip, until it appeared on its cut edge close to the mucous membrane. It was thrust on so as to strike the cut edge of the opposite side close to the mucous membrane, and so on until its point appeared on a line with the right ala of the nose, and at a similar distance from the cut edge to that on the opposite side. The needle lay perfectly straight across, the parts were pressed from behind forwards towards each other upon the needle, and they came most evenly together with scarcely any strain; and it was most remarkable how beautifully the left half of the nose, which was so distorted and spread out, at once came up into symmetry with that on the right side. A few turns of silk thread were cast in figure of 8 form around the needle, the parts being well forced in upon the needle in very accurate contact before the thread was thrown round, so as to prevent their receding again; thus there was no sharp pressure made by the cord. The second needle was inserted at a similar distance from the cut margin as the first, and exactly at the junction of the skin and red border of the lip on the left side, and made to travel through the lip close to the mucous membrane to the opposite side, and enter exactly in a corresponding position, and made to appear above the red margin at the same distance from the cut surface as that on the opposite side. The cheeks were shoved from behind forwards, and the surfaces pressed closely and evenly together. Nothing could be more perfect than the way in which they lay together. I was most particular in throwing the cord about the needle in the figure of 8 form, so as not to strangle the tender soft parts over the needle. Each turn of the cord was made to lie most evenly, the *first being from above*, and so on alternately until the cut red border was nicely covered and supported. The third needle was placed between both, and the cord cast around it with similar precautions to those already used. The ligature around the first needle was then turned a few more times, in order to give a wider support. The ends of the needles were then cut

off with pliers, and a narrow bit of sticking plaster placed between the clipped edges and the skin on either side. Then the cheeks were well pressed forwards, and I applied, as my usual custom, a large piece of sticking plaster, hollowed beneath, to go under the chin, and the wide portions passed upwards to the temple on either side, and so restraining the cheeks from going backwards again; by this means all tension was removed from the needles. I put the child at once on small doses of opium. The following is the form which I have adopted for many years:—*R.* Tinct. opii gutt. x., olei anisi gutt. x., syrup alb. \mathfrak{z} iii., aquæ ad \mathfrak{z} ii.; a teaspoonful every third hour until quiet and dozing are secured.

6th.—Child took abundance of warm milk, and slept lightly and quietly from the administration of the mixture; no crying; parts all look very well.

7th and 8th.—Child going on most favourably; swelling considerably abated, and takes quantities of milk; also continues the sedative mixture.

9th.—Removed needles this day. Ninety-six hours after the operation, having as in the previous case given nearly a double dose of the opium mixture to quiet the child, the entire wound healed most evenly and beautifully throughout, from within the nostril to the very lowest point of the red margin, and the red lip naturally pouting (no notch), from the admirable way the concave wounds lay together, and thus projecting slightly the lowest border of the lip. Applied several straps of plaster to sustain parts together, pressure being made upon the cheeks, forcing them forward during the entire dressing. The wide piece of plaster was then applied, as before stated, to take the place of the assistant's hands in keeping the cheeks forward and relaxing the parts external to the united wound; the child all through the day took milk freely and his bottle occasionally.

10th.—On calling to see the child this morning at ten o'clock, I was at once told that one of the servants went in to play with the little fellow when his nurse was away, and he was forced into a fit of laughing, and in the effort he opened the lower part of the wound in the red border, and it bled very freely. In order to rectify the mischief I cleansed away all blood, refreshed the edges of the gaping little bit, and passed a needle from left to right just at the juncture of the red border and the skin and a little external to the point first selected; this was carried across to a corresponding point on the opposite side, and a silken thread thrown most cautiously around it in figure of 8 form; this brought the surfaces most accurately together. A couple of narrow straps were placed between this suture and the nose, so as to support the lip above; the wide strap was then put on to maintain the cheeks forward as before. Visited at 3 and at 8 p.m.; child has taken quantities of milk and also his bottle, has been kept perfectly quiet, and sleeping lightly all day; the lip looks perfectly glued together.

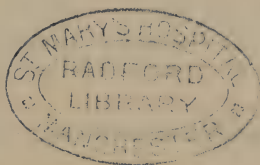
11th.—The child slept quietly, the mixture being administered every fourth hour, and drank nearly a quart of hot milk through the night; the little creature is quiet, and the edges of the lip seem glued together; no gap whatever beneath, and there is no tension on the needle.

On the 14th—ninety-six hours after the insertion of the needle to rectify the mischief that had been done—I carefully withdrew it; the threads been adherent lightly I let them remain, and placed the strap under the chin from temple to temple to keep cheeks forward, and a single strap across.

15th.—Removed all, and found the union perfect throughout from the nostril to the lowest part of the red border of the lip—in fact, it was most remarkable how such perfect union was obtained after the violence which tore open the wound after its first perfect cohesion.

17th.—The union now is everything that could be desired; the nose is perfectly straight—no twist on either side—the upper lip is perfect throughout, the union of opposite sides being most accurately accomplished; and, when the little creature smiles, the little incisor milk-white teeth appear in their natural curve, proving above all things the necessity for preserving the intermaxillary bones with the little teeth. This, however, cannot be done by violence; the osseous piece between the intermaxillary bone and the maxilla must be all cut through with my instrument, and the osseous ridges from the vomer likewise perfectly, before force should be applied to turn it into the gap towards the opposite maxillary bone. If the osseous attachments are correctly divided the force required to turn over the projecting piece into the place that it should occupy will be so trifling that the little teeth or the source from which they spring will not be interfered with or damaged. So it was in this very remarkable case. The parts are again well sustained and supported together by adhesive straps, so as to take off muscular action from any traction on the recently-united parts.

20th.—All straps now removed, and nothing could prove more successful than the operation. The nose is perfect, not in the least degree flattened or dragged, the lips are beautifully united throughout to the very lowest edges, and, at a little distance, the marks of the operation are scarcely perceptible. When the child smiles the mouth is quite evenly drawn upon, and there is not the least deformity left.



ART. XII.—*On Pulsating Liver.* By DAVID DRUMMOND, M.A., M.D., Univ. Dubl.; Physician and Pathologist to the Newcastle-on-Tyne Infirmary; Physician to the Children's Hospital; Lecturer on Physiology, University of Durham College of Medicine, Newcastle-on-Tyne.

[Concluded from page 296.]

THE upholders of the view that *direct impulse* plays the most prominent causative part in relation to pulsation of the liver, might be excused for urging against the *back-wash* theory that a retrograde wave of sufficient force to bring about expansion of the liver must necessarily cause such obstruction to the venous return, as, either to arrest the circulation altogether, or, so far to impede it, as to give rise to the most exaggerated anasarca—the fact being that very extensive dropsy was not a feature in many of the cases I have observed. But such a consideration goes for nothing in the presence of venous valves below the liver, and the powerful and well-directed left ventricular systole and arterial elasticity set off against the pseudo-right-ventricular venous force. The wave may descend from the right ventricle into the liver whilst the blood is ascending the vena cava, just as waves raised by the wind will ascend a river against a strong current.

In passing on from the causal part of the subject, I would once more state my belief that the phenomenon under discussion is principally the result of a retrograde wave from the right ventricle. When once it is conceded that such is the case but little additional reasoning is necessary to establish indisputably its right to a prominent place amongst the physical signs of disease.

Taylor remarks that “well-marked systolic pulsation of the liver may be regarded as one of the most certain signs of regurgitation through the tricuspid orifice, and its occurrence would at once confirm the diagnosis of that lesion, founded on jugular pulse and systolic murmur over the tricuspid orifice.”^a

Friedreich goes further and considers hepatic pulsation “not only as one of the surest, but as one of the first signs of tricuspid incompetence.”^b

The diagnosis of tricuspid insufficiency is often a matter of considerable difficulty, and especially to those who fail to recognise the importance of pulsation of the liver; and further, relying

^a Op. cit. P. 403.

^b Krankheiten des Herzens. 1867. Quoted by Taylor.

alone upon systolic tricuspid bruit and well-marked jugular pulsation for the grounds of their diagnosis, clinical observers have come to view tricuspid regurgitation as a rare disease, well nigh refusing, with Niemeyer, to recognise its existence unless pathological evidence of a previous valvulitis can be shown. In my opinion such extreme caution, amounting to scepticism, is quite unnecessary, and it will, I think, be found that by the full application of the clinical picture alone the disease may often be made out with accuracy, even when the *post-mortem* examination fails to show distinct incompetency. Thus it would appear, if this be true, that *post-mortem* observation is not the only, or even the best way of building up statistical matter relating to the relative frequency of mitral to tricuspid disease, including of course secondary with primary lesions.

How do authorities on cardiac disease treat of the physical signs of tricuspid regurgitative disease? Of the bruit, Hope^a says:—"Systolic murmur of this valve (tricuspid) is rare—1. Because valvular disease does not occur oftener than about once on the right side of the heart for sixteen times on the left. 2. Because when it does occur it is almost always much less in degree and usually not sufficient to disable the valves."

Walshe^b writes:—"This tricuspid murmur is generally soft and of low pitch, rarely masks the systolic sound completely, is of rarer occurrence than tricuspid regurgitation itself, and is probably not always detected when it exists. It is, absolutely speaking, rare, because regurgitation often occurs from insufficiency, without roughness or other morbid change, of the valves, and because the back current is often not forcible enough for the production of a murmur."

Balfour^c writes:—"Like most of the cardiac murmurs, the systolic tricuspid murmur is occasionally absent, even when all the other signs of tricuspid regurgitation are certainly present, the murmur being always the least reliable sign."

Turning then to jugular pulsation as a sign of tricuspid regurgitation, Hayden^d writes:—"Here it is only necessary to remark that the positive signs of tricuspid inadequacy are usually limited to the phenomenon of venous palpitation in the neck, where structural alteration in the valve does not likewise exist."

^a Hope on Diseases of the Heart. P. 80.

^b Op. cit.

^c Op. cit. P. 178.

^d Hayden. Diseases of the Heart and the Aorta. P. 1006.

Walshe states that jugular pulsation "is most frequently met with in cases of tricuspid insufficiency, though by no means in all of the class."

Flint^a remarks, when writing of the venous pulse in the neck:—"If it be marked or extensive, it is to be considered generally as evidence of tricuspid regurgitation. Its significance under these circumstances renders it a valuable diagnostic symptom. It is more valuable in a positive than in a negative point of view—that is, while its presence in a marked degree is in general evidence of tricuspid regurgitation, its absence is not proof of the non-occurrence of this regurgitation."

From these quotations it will be gathered that, although systolic tricuspid murmur and jugular pulsation are important aids to the diagnosis of tricuspid regurgitation, yet—especially as regards the former—they are by themselves insufficient and uncertain. This becomes more apparent when we consider that the murmur is often absent in cases of regurgitation due to secondary dilatation of the right ventricle, without structural alteration in the valves, and that before venous pulsation can occur in the jugulars the venous valves must themselves have become incompetent—an event which usually takes some time to develop.

In the following case of Graves' disease the significance of a murmur heard along the left border of the sternum, corresponding to the 4th, 5th, and 6th ribs, was made known by the discovery of pulsation of the liver:—

CASE III.—Ann D., aged thirty-nine, married, of no employment, was admitted into hospital for palpitation of the heart and enlarged thyroid. Her illness was of thirteen months' duration, and commenced with palpitation. A few months afterwards the goitre was observed. When she came under treatment the case was well marked so far as the heart, thyroid, and carotids were concerned; the eyes, though but slightly protruded, presented in a prominent manner the imperfect falling of the upper eyelid on lowering of the plane of vision, described by von Gräfe. At first the only murmur audible in the cardiac area was systolic and basic, best heard so far as the heart was concerned in the mid-sternal line between the second ribs, but very loud in the carotids and over the top of the sternum. [This apparently systolic aortic bruit, which is so common in cases of Graves' disease, does not, I believe, originate at any of the cardiac orifices, but is conducted from the large vessels, where it arises from vibration of their walls.] The patient was

^a Austin Flint, M.D. *A Practical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Heart.* P. 145.

lost sight of for a few weeks, and when again seen she was distinctly worse; her lower extremities had become œdematous, and her respiration embarrassed. A well-marked systolic murmur was heard in the position I have already indicated—namely, in the left parasternal line at the 4th, 5th, and 6th ribs. No murmur was audible at the left apex beat. The liver was slightly enlarged, and *pulsated forcibly*. This pulsation affected distinctly the whole of the right ribs which confined the organ. The veins in the neck were full, but almost entirely free from pulsation. Under the influence of rest, with digitalis, iron, and hydrobromic acid, the hepatic pulse, excepting that which was confined to the left lobe, disappeared, and the murmur became less distinct, whilst the dropsy vanished entirely.

In the case I am about to relate—an extremely interesting but obscure one, in which jaundice was the leading symptom—pulsation of the liver gave a clue to the diagnosis.

CASE IV.—Robert F., aged forty-one, a cabinet-maker, was admitted into hospital for jaundice and debility. He had suffered from rheumatic fever twelve years previously, from which he apparently recovered perfectly. Being intemperate, he often experienced “bilious attacks” after a booze. On a Sunday morning, six months before admission, after indulging more freely than usual, he awoke to find himself jaundiced, with his legs swollen. From this attack he had never recovered, but, on the contrary, the jaundice deepened, and he gradually lost strength and flesh. On admission the skin and conjunctivæ were deeply stained; the jaundice was of an olive hue, and suggested a mixture of bile and cyanosis, the former predominating. The legs were very slightly œdematous; there was no other dropsy. The urine and fæces presented the usual features of obstructive jaundice. The patient was emaciated and weak, but complained of no pain. The liver was enlarged, and could easily be felt below the ribs. The enlargement was smooth, and palpation caused no uneasiness. *The whole organ pulsated*; the pulsation was distinctly double, and resembled that which obtained for a time in the case of Wm. S., alluded to as Case I. in this communication. The first pulsation was forcible, and undoubtedly expansile; the second was feeble, and without any distinctive feature. On examining the heart it was observed that the apex beat occupied an extended area—i.e., pulsation was visible in the 4th and 5th interspaces between the left parasternal and the left mammary lines. This pulsation, unlike the parallel case of Wm. S. (Case I.), was single; the radial pulse was also single. A soft systolic bruit was audible in the interspaces where the pulsation was visible, but was best marked at the right apex, close to the sternum. Following the systolic murmur were two feeble sounds, apparently the cardiac second sound, and a presystolic tricuspid bruit. At the base, except

that the sounds were feeble, nothing abnormal could be detected. In two or three days, after the exhibition of digitalis, the second hepatic and jugular pulsations disappeared (for a double pulse was present in the jugular veins also), leaving only the first or systolic impulse. The supposed presystolic murmur also vanished. A week afterwards it was noted that the hepatic and venous pulsations were almost entirely gone, and a very faint trace of the systolic tricuspid bruit was all that remained of the signs of tricuspid regurgitation.

I may remark here that I found it by no means an easy matter to account for the diastolic hepatic and jugular pulsations. The only view that appeared at all tenable, considering the absence of a double ventricular beat, was to regard the diastolic hepatic pulsation as the result of auricular reflux. The patient was kept in hospital for more than two months, and subjected to several methods of treatment with the object of relieving the jaundice, but all efforts in this direction signally failed, and he was discharged as deeply jaundiced as when first admitted.

The diagnosis I ventured upon in this case was hypertrophic cirrhosis of the liver, and thrombosis of one of the hepatic veins, with an antecedent tricuspid regurgitation. I shall not stay to discuss the grounds upon which this diagnosis was founded further than to emphasise the importance of the hepatic pulse in the case.

In the following instance all the usually noted signs of tricuspid regurgitation were so plainly marked that I am induced to insert it here as an excellent exemplification of the typical symptom-picture of the affection:—

CASE V.—Mary C., aged twenty-four, a dressmaker, was admitted into hospital for “pain in her heart.” She suffered from rheumatic fever five years previously, and was made aware at the time that her heart “was affected.” She has since complained of dyspnœa, cough, palpitation, and œdema of the legs. Five months before admission she caught cold, and became markedly worse (the origin of a renal affection from which she suffered as well—acute, passing into chronic, parenchymatous nephritis). Her appearance on admission was that of a Bright’s case, very slightly jaundiced and cyanotic. The legs were œdematous. She complained of pain in the epigastrium, shortness of breath, cough, and palpitation. The jugular veins were distended, and pulsated plainly. The pulsation followed immediately on the ventricular systole, and was of that character which Morgagni^a and others have rightly ascribed to ventricular reflux—viz., systolic, and distinctly devoid of undulatory movements preceding and following the elevations. *The liver pulse was*

^a Vide Dr. Hayden’s work on Heart and Aorta, page 572.

general and well marked. The pulsations appeared to be initiated, as it were, by the apex beat, but they survived it. In the heart equally characteristic signs were discovered. The apex beat was in the 5th interspace, two inches from the sternum. A thrill could be felt preceding the beat. On auscultation at the apex the *triple canter-like* sounds, so distinctive of stenosed mitral orifice, were audible, made up of a harsh, presystolic mitral bruit, running up to a systolic mitral murmur, which was followed by the cardiac second sound. As the sternum was approached the presystolic disappeared, whilst the systolic murmur remained, and was plainly heard to the right of that bone. At the base the pulmonary second sound was accentuated, whilst the first was feeble and muffled.

The diagnosis in this case was made without difficulty, for, even without the aid of the hepatic pulse, few would have overlooked the well-marked tricuspid systolic bruit, and the jugular pulsation; however, the pulsating liver not only stamped it as one of tricuspid reflux, but was, in a measure, an index of the amount of the regurgitation.

The following case, to which I shall very briefly allude, is of interest, inasmuch as the hepatic pulse was the harbinger of a rapid *break-up*.

CASE VI.—Peter P., aged nineteen, a coal miner, was admitted into hospital for cardiac disease. He stated that he had suffered from acute rheumatism five years before, which “left him with a trouble at the heart.” The skin was of a yellowish colour—slight jaundice. He complained of dyspnoea, palpitation, and œdema of the lower extremities. There were well-marked presystolic and systolic mitral murmurs, with a very distinct tricuspid systolic bruit. The root of the right internal jugular pulsated slightly; very feeble, if any, hepatic pulsation could be detected, though the liver was enlarged. At first there was considerable improvement apparent in his condition, which, however, was but short-lived, as an attack of acute rheumatic inflammation in the knees—ushered in by sore throat, and resulting in pericarditis—put a different complexion upon the case. The liver then began to pulsate more vigorously, and the pulmonary distress increased. At this time one or more hæmorrhagic infarctions of the right lung was diagnosed. The patient was removed a few days before his death, so that no *post mortem* could be made.

Cases VII. and VIII. of the group which furnishes the subject-matter of this article need not be adduced, for although they are good examples of tricuspid reflux with hepatic pulse, they do not serve to illustrate any point not already touched upon.

I shall now cite briefly two cases, both of which deviate from the general rule, and might appear to discredit the views I have already given adhesion to; the first exemplifies the fact that *very vigorous* jugular pulse may occur in company with *comparatively* feeble hepatic pulsation; and the second is an example of a case of well-marked tricuspid regurgitant disease unattended by any general liver pulse whatever.

CASE IX. (of the group).—A. B, aged thirty-eight, a labourer, was brought to hospital for dropsy, dyspnœa, &c. It was at once observed that he was extremely ill; he had to be propped up in bed, and complained sorely of extreme difficulty in breathing, palpitation, and pain in the legs (œdema). There was no rheumatic history; his symptoms were of eighteen months' duration. Examination of the heart revealed the presence of loud mitral and tricuspid systolic bruits. The situation of the ventricles was marked by a wide area of visible pulsation in the fifth and sixth interspaces between the left mammary and parasternal lines. The veins in the neck pulsated *most forcibly*, especially the right internal jugular, the lower part of which stood out like a hernial protrusion, and, indeed, communicated to the fingers a sensation resembling an umbilical hernia in an infant in which are being induced sudden tension and relaxation by crying, except that the pulsations were more rapidly delivered. The liver was enlarged and could be felt to pulsate, though not at all forcibly. The patient died on the day succeeding his admission into hospital, and as the friends refused permission, no *post mortem* examination was made.

Whilst I am in perfect harmony with the opinions of Friedreich and Taylor, I do not wish to be understood as claiming for pulsation of the liver the character of pathognomonic in relation to tricuspid regurgitation. I have already stated my belief that the phenomenon is very generally overlooked, and further I am of the opinion that *it is the most constant sign of tricuspid regurgitation*, less variable than systolic tricuspid murmur and jugular pulsation.

But that cases of well-marked tricuspid incompetency do occur without pulsating liver, is, in my experience, also a fact, as the following and last case which I shall adduce well shows:—

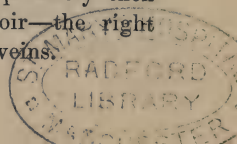
CASE X.—John B., aged twenty-four, a labourer in an iron foundry, was admitted into hospital for œdematous lower extremities, palpitation, and shortness of breath. He ascribed his illness to an attack of rheumatism from which he suffered fourteen months before. It was discovered that his affection was mitral regurgitation. He left the infirmary considerably relieved. Seven months afterwards he again presented

himself for admission, when it was apparent that his symptoms were much more pronounced. He now experienced extreme difficulty in breathing; and suffered much from general dropsy, and pain about his heart. The liver was enlarged, but was apparently free from anything like general pulsation. Slight pulsation was observed in the left internal jugular, whilst the right internal and external jugulars were hard and prominent and evidently thrombosed. [Thrombosis of the left subclavian vein had occurred when the patient was in hospital on the previous occasion.] Percussion revealed a very marked hypertrophied heart; the left apex was an inch and a half to the left of, and three and a half inches below, the left nipple. At the left apex a loud systolic mitral bruit was audible; as the sternum was approached this murmur became feebler and then louder again, so that besides the mitral systolic there was also a tricuspid systolic murmur. There was considerable bulging to the right of the sternum above the fourth rib—presumably the right auricle. The patient lingered for some time after these observations were first recorded. Pulsation of the liver never developed itself.

Post-mortem.—The heart was much enlarged, and weighed 26 ozs.; all four cavities, especially the right auricle, were distended with dark soft clot, which gave the organ as it lay *in situ* a globular shape. The right auricle was *enormously dilated*; the right ventricle was also dilated and somewhat hypertrophied. The tricuspid curtains were healthy, but failed completely to close the orifice, which was very considerably dilated, and measured six inches in circumference. The left ventricle was hypertrophied and dilated; the mitral orifice was dilated, measured five and a half inches in circumference, whilst the valves were thickened and incompetent. The following veins were *completely* thrombosed—viz., the right internal and external jugulars, the right subclavian, and the right innominate down to the union of that vessel with the right inferior thyroid vein, and on the left side, the subclavian. The liver was much enlarged and weighed 6 lbs.; on section it presented the usual appearance of the nutmeg condition in an advanced stage.

Sufficient was, I think, discovered at the autopsy to account for the absence of a general hepatic pulse in the case.

Although there was undoubtedly very considerable tricuspid reflux, yet the wave which descended the inferior cava at each ventricular systole was insufficient to bring about hepatic dilatation, and so produce the pulse. The explanation is to be found, I venture to suggest, in the enormously dilated condition of the right auricle on the one hand, and the imperfect filling of that cavity (from the extensive thromboses) on the other. The wave from the right ventricle would probably then expend its force in dilating the great *overflow* reservoir—the right auricle—and thus but little of it would reach the hepatic veins.



In conclusion, I would urge, firstly, that hepatic pulsation of a general character is principally the result of a right ventricular *back-wash*; secondly, that it is a very valuable diagnostic sign of tricuspid regurgitation, often aiding materially in forming an opinion as to the amount of the reflux; but that, thirdly, it is not pathognomonic of that condition.

THE PATHOLOGY OF PSORIASIS.

DR. GEORGE THIN, in a paper on this subject, describes the naked-eye appearance of a patch of psoriasis. White masses of epidermic scales cover a reddish vascular base, and if the scales be removed by the finger nails, blood oozes from the vascular surface. This proves increased vascularity of the papillary layer of the skin, a morbid formation of epidermis over the papillæ, and also that the healthy rete mucosum is deficient, for, when healthy, that membrane protects the vessels of the papillary layer from such slight injury as suffices to cause bleeding from a patch of psoriasis. Dr. Thin describes at length the microscopical appearances seen in sections of a patch of psoriasis, and gives reasons for believing that the morbid changes in the epithelium cause the inflammatory condition beneath it. Shortly expressed, histological analysis has carried us thus far. A diseased condition of the epidermis at certain localised points leads to inflammatory changes in the subjacent vessels. The serous effusion which takes place from the injured vessels breaks down the diseased epithelium, and leads to the formation of a papilla. At the same time, whilst the apex of a papilla is being thus excavated, a new formation of epithelium takes place at the side of the new papilla, and by growing downwards, the papilla becomes longer. The exudation from the vessels favours a rapid formation of cells in the rete mucosum; but these cells, from a defect, the nature of which is not understood, do not go through the normal changes by which the horny layer is formed, but are thrown off whilst the transformation is incomplete. In persons subject to psoriasis, very slight injury to the epidermis, from a scratch, &c., sets up the specific morbid action, and produces a patch. Unlike certain other diseases, the inflammation caused by the presence of the morbid epithelium, is not sufficiently intense to destroy the morbid influence, and thus effect a cure. But inflammation can be artificially raised to an intensity great enough to destroy that specific morbid condition. This is the signification of the cures effected by Goa-powder, tar, &c., but for the desired purpose Dr. Thin prefers pyrogallic acid.—*British Medical Journal.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Deaf-Mutism and the Education of Deaf-Mutes by Lip-Reading and Articulation. By ARTHUR HARTMANN, Berlin. Translated and Enlarged by JAMES PATTERSON CASSELLS, M.D., Glasgow.

DR. CASSELLS has done a really useful work in giving to the profession the translation of Dr. Hartmann's book. The subject of deaf-mutism and the education of deaf-mutes by the lip method, in contradistinction to that by the finger or by signs, has of late years attracted special attention. The success which has attended oral instruction in Germany and America has stimulated us at home, so much so that at the Conference held this year (March, 1881) of the governing bodies of institutions for the deaf and dumb, of thirteen English and Scotch schools there represented, all either had adopted or were adopting the oral method (Report for the Oral Instruction of the Deaf and Dumb, 1881). At the Teachers' Conference, Mr. William van Praagh asserted that ninety-nine out of every hundred deaf-mutes can be taught to speak. All artificial signs are rejected. The child is slowly led on by the force of imitation, and a gradual process of education in the proper method of breathing and the management and control of the facial muscles—first to the production of sound, and then to the formation and correct utterance of vowels, consonants, lip and lingual sounds, and so on to more complex formations. In the same manner the child is taught to read and write. Dr. Hartmann devotes several chapters of his work to the peculiarities and deformities, both physical and mental, of deaf-mutes. Though there is a connexion between the scrofulous origin of many aural complaints and the consequent deafness and deaf-mutism, yet the rate of mortality and the health of children generally in these deaf-mute schools is not so unfavourable as we would be led to think. Their other faculties are often extraordinarily developed, as, for instance, memory and the senses of sight and touch. Some striking examples of these facts are to be found in Dr. Hartmann's work. The detection of simulated deaf-mutism is frequently a matter of

great difficulty. It is more so should the impostor feign the part of an untaught mute. The exaggeration of his signs and gestures and his inability to converse or make himself understood to other deaf mutes will be an assistance. "Careful observation and sudden surprises" are most to be relied on, and there are several examples of such malingerers being detected thus. Waldenburg gives one instance in which dumbness existed though the hearing was quite good. The mother was affected in the third month of pregnancy with total paralysis of the right side and with complete loss of speech. The child heard a whisper behind his back, yet there was congenital dumbness. To many the statistics in Dr. Hartmann's book will be most interesting. Of 246,000,000 persons there were 191,000 deaf mutes—an average of 7·77 in 10,000. The highest number is in Switzerland—24·5 in 10,000. The male sex furnishes the largest proportion. The Jewish race appears to be singularly disposed to the defect. The age 1 to 5 years furnishes the largest number. There is little doubt but that congenital anomalies in the organ of hearing are the cause of many cases of mutism, and the very early ages of those afflicted prevent us often saying if it is hereditary or acquired. Consanguineous marriages favour the occurrence of mutism. Hereditary tendency may be assumed when we find two or more children of the same family affected. From a large number of cases Meckel draws the conclusion that the children of parents much exposed to damp and an unhealthy atmosphere are more liable. But the most important lessons to be learned from this work of Dr. Hartmann are to be drawn from the facts he gives as regards the causes of "acquired deaf-mutism and the relative ages of those affected, as well as the proper steps to take to prevent its development." The vital importance of early attention to the deaf-mute is proved from these extracts from Dr. Hartmann's work :—

" ' Besides the systematic instruction, medical treatment, as far as this is possible, must, of course, be employed as early as possible ; and I could relate to you several cases which have been under my own treatment, in which deaf-mutism was clearly prevented, or arrested and cured, when already partially developed. There is, for instance, at the present moment a girl, still under my care, who during the first few months after birth had a copious discharge from both ears, and only perceived very loud noises. When I saw her for the first time, she was already four years and a few months old, but could, nevertheless, only produce quite inarticulate, barking sounds, which were even unintelligible to

her careful mother, so that in reality she was already considered a deaf-mute child. Local treatment of the otorrhœa soon caused it to diminish, and with this decrease of the discharge the child commenced gradually to pay more attention to noises around her, and especially to the words which were spoken close beside her, and also to make attempts to repeat words pronounced for her. These experiments were carefully carried out, and as often as possible the child was made to repeat distinctly words and sentences. In this manner not only was the hardness of hearing lessened, but, after several months, the child could even speak somewhat distinctly; in any rate its speech was fairly intelligible. Simultaneously the whole nature of the child, who was formerly absolutely unmanageable, was changed, and she became more docile. At last her animal-like wildness, which showed itself in the expression of her face as well as in the continuous squirrel-like mobility of her whole body, disappeared. Without the local treatment, and without the great and judicious care of her friends, the child would certainly soon have had to be considered a deaf-mute.

“ ‘Schmalz^a also relates that a child five years old had, after scarlatina, a purulent discharge from both ears two years before it came under treatment, and could only speak a few words very indistinctly. By the treatment, the hearing-power of the child was so much improved that, without instruction, it learned to speak very well.

“ ‘Dr. Alt^b recently reported the cure of a case of acquired deaf-mutism. A boy, who was born with a cleft-palate, and who had heard and spoken well, became at the age of two and a-half years, in consequence of scarlatina, so hard of hearing in both ears that he lost his speech, and could be communicated with only by signs. On examination of the boy, when seven years old, there was found great swelling of the mucous membrane of the nose and of the naso-pharyngeal cavity, and a foul-smelling discharge from both ears. After the local treatment of the lining membrane of the tympanic cavity and of the pharynx had improved the hearing on both sides, staphyloraphy was also performed. At the end of the treatment, the boy heard a medium voice on the left at a distance of twenty-five feet, and on the right of twenty feet. He has become very talkative, and attends an ordinary school.

“ ‘As a rule, it may be assumed that deafness occurring up to seven years of age will have dumbness as its consequence, while speech is retained if the child be older than that. Still there are cases on record in which children of fourteen and even fifteen years of age have lost their speech by becoming deaf. In such cases it must, however, always remain doubtful whether deafness alone was the cause of the deaf-mutism.’

^a Ueber die Taubst. P. 105a.

^b Archiv für Augen-und Ohrenheilk. Vol. VII., p. 211.

“ ‘We will assume,’ says Troltsch, ‘that among the 38,489 deaf-mutes in Germany, only 15,000 were not born with the defect, but acquired it subsequently, and we will surely not be far out if we assert that a fifth of those—viz., 3,000, if they had received timely and energetic treatment, would not have become deaf-mute, but at the worst hard of hearing to a high degree, so that they might have made use of ordinary private tuition, or could even have attended the public schools, and would at any rate have retained intelligible speech.’ ”

As the principal causes of deaf-mutism, we have consanguineous marriages, hereditary naso-pharyngeal troubles, throat and nose affection, catarrh of the middle ear, suppurative otitis from scarlatina, exanthemata, cerebral affections (convulsions), injuries. Typhus is regarded by Hartmann as a potent cause.

The importance of watching and treating naso-pharyngeal troubles in children can hardly be exaggerated. Dr. Hartmann's opinion on this point is interesting:—

“Statistics of deaf-mutism can give no information as to naso-pharyngeal catarrhs being the cause of acquired deafness. To gain this information we must examine the deaf-mute children in early infancy, which medical men who practise aural surgery will find plenty of opportunity to do. I had occasion myself to examine a number of children who were brought to me by their parents because they did not learn to speak. As the hearing of little children cannot be tested at all, or very imperfectly, I requested the parents to observe whether the children were possessed of hearing or not. They were told to watch whether the child turned round and became attentive when loud sounds were produced, as by clapping of hands, calling to it, playing upon an organ, ringing a bell, &c. The parents generally convinced themselves that either great or total deafness existed. In several of those cases I found that the children suffered from naso-pharyngeal catarrh, and the hearing could be improved by the removal of the catarrh and a simultaneous treatment of the ear, after which the children rapidly learned to speak. In other cases, however, treatment proved altogether useless.”

Dr. Turnbull, of Philadelphia, who has written some valuable papers on deaf-mutism, advises special attention to the nose and tongue, any malformation or anomalies, and the encouragement of gymnastic exercises with the tongue and lips. The general deportment and carriage of the child should be attended to, to prevent the awkwardness in gait and manner so often accompanying deaf-mutism. So should the special senses of sight and touch be cultivated. The moral training of deaf-mutes is of special impor-

tance. While considerable kindness is shown them, they must be made to know the difference between right and wrong; their habits of order and discipline should be carefully attended to. Foolish indulgence is as bad as excess of severity.

The choice or selection of a school is a matter of primary importance. The deaf-mute must have special instruction and special teachers. It is in this special instruction that the school for the deaf-mute is so superior to the ordinary school. As Dr. Turnbull remarks on this matter :—

“Congenital deaf-mutes, attending an ordinary school, may learn to write, or rather to copy, and may perhaps get some idea of numbers; but the teachers of such schools do not know how to teach their pupils’ minds, even if they have time to teach them. As a rule, such children might as well be at play, except that school occupies their time and their thoughts. Another advantage, however, which is gained for the deaf-mute children, is in their mingling as much as possible with those who hear.

“‘If a child cannot profit by the instruction given in an ordinary school, let him if possible have a private teacher, but not necessarily in his own house, as he is not always subject to the best government there. If he needs stimulating, it may be well to place him in a class with four or five others of a suitable degree of advancement; and if this cannot be done, he may be placed in a school or institution where the instruction is especially adapted to the deaf.

“‘If children are too deaf to profit by the common school, and yet have sufficient hearing to have acquired speech through the ear, instructors of the deaf are nearly or quite unanimous in the opinion that they should be taught by articulation and lip-reading. The experience of the teachers would lead them to say, “Let the attempt be made, if possible, to teach *every* deaf child in this way.”’”

We can learn a useful lesson from a perusal of the table of cases of acquired deafness in Dr. Hartmann’s work. We see how important it is to attend to the ear and examine it carefully, for collections in the external meatus, pus in the tympanic cavity, caseous deposits, growths; to keep the naso-pharyngeal tract healthy, to attend to the tonsils and Eustachian tubes. We must refer our readers to the many interesting chapters in Dr. Hartmann’s work for complete information on all the points bearing on the curability and education of deaf-mutes, both during their school years and after they are sent to earn their livelihood. There are some instructive observations on the legal responsibility of

deaf-mutes and the relation of deaf-mutism to blindness. Appended are some valuable statistical tables.

We cannot but welcome this work as a most useful addition to the literature not alone of this subject, but to that of aural surgery generally. From a social point of view, a further diffusion of knowledge on the subject of the education of the deaf and dumb is highly important. It is well calculated, as Dr. Turnbull so well expresses it, "to excite a greater degree of interest in physicians for the deaf-mute, with an endeavour on their part to prevent deafness, and so diminish the number of deaf-mutes; to induce a more conscientious study and treatment by physicians of the ears of their patients when the latter are attacked by scarlet or typhoid fever, cerebro-spinal meningitis, or obstruction of the Eustachian tubes as the result of measles, diphtheria, tonsillitis, or syphilis; to lead physicians to give the systems of instruction pursued in our various institutions for the deaf and dumb a certain amount of study, so as to be able to recommend intelligently to patients, their relatives, or friends, the best method for each individual case."

The profession generally is indebted to Dr. Cassells for placing so interesting and comprehensive a work within its reach.

H. M. J.

Heart Starvation. By J. MILNER FOTHERGILL, M.D. London: Lewis. 1881. Pp. 20.

IN this paper, reprinted from the *Edinburgh Medical Journal* of last May, the author seeks to establish a condition of the cardiac muscle which he calls heart starvation, and which, he says, is generally, except by himself, confounded with fatty degeneration. This heart starvation occurs "when the liver is seriously disordered, so that the peptonised albumenoids which have passed from the gastro-intestinal canal into the blood, do not properly undergo their further and final transformation." This sounds very fine, but we are not told in what the hepatic disorder consists, what action the liver exerts on the peptonised albumenoids, or what the further and final transformations of these consist in, so that we do not feel ourselves much wiser. Again, on the next page we read:—"Beyond difficulty in their actual digestion, hydrocarbons—starch, sugar, and fat—give us little or no trouble; but it is far different with the albumenoid elements of our food. From the time, as soluble peptones, they pass from the digestive

tract into the blood, until the time of their reappearance as bile acids (!) and urinary solids, their history is that of an underground river—we know it is somewhere, but its whereabouts is veiled from us.” Does Dr. Fothergill mean to tell us that he can trace fat or starch through the body any more than he can what he calls albumenoids? These are specimens of the physiology which, we are told with a great flourish, is to guide us in the diagnosis and treatment of cardiac disease.

As to the heart starvation, the author does not adduce one particle of proof that any such condition as he describes exists. He does not even attempt to define the condition of the muscular tissue when starved by the improper conduct of the liver, and the cases which he gives are, as far as can be gathered from their meagre details, either examples of valvular disease or of dyspepsia, with reflex disturbance of the innervation of the heart. These cases had all been undergoing starvation for lengthened periods under the care of the most eminent practitioners in London and elsewhere, and getting worse, until they came to Dr. Fothergill and were treated physiologically, having their blood enriched by getting less to eat, and purified by having the “nitrogenous waste swept away” by blue pill and black draught—not a very original treatment, but one whose good result is detailed in numerous extracts from effusive letters.

We have seen the sorts of theories which Dr. Fothergill propounds; on page 12 we have an instance of how he supports these. We do not like to accuse him of wilful misrepresentation of a distinguished writer, but if he is not guilty of this, he shows a degree of literary carelessness, and of anatomical and pathological ignorance, which would hardly be expected from one who, as he tells us, has described the “true,” as compared with the “false arcus senilis,” whatever they may be. He introduces a wood engraving taken from “Rindfleisch’s Pathological Anatomy,” but instead of acknowledging simply its source, he speaks of it as “a plate in my work on *The Heart and its Diseases, with their Treatment; including the Gouty Heart*, taken from Rindfleisch’s well-known work,” &c.—a rather palpable example of the puff oblique. Under this engraving is printed “Acute Degeneration of the Heart (from Rindfleisch);” and in the text we read:—“Here we see the heart-fibres actually fattily degenerate after acute fever.” Rindfleisch himself says the cut represents the appearance of the muscles in the condition known as myositis

typhosa—a condition which, whatever its real nature may be, certainly has no relation or similarity to fatty degeneration. Moreover, anyone who knew the appearance of the cardiac muscular tissue would know that the engraving is not drawn from it, but from a portion of a skeletal muscle, and Dr. Fothergill, to use his own expression, “knows (well, he ought to know)” that the myocardium differs most materially from the voluntary muscles in structure, as well as in its physiological and pathological relations, and that even supposing the drawing did represent muscles in a state of fatty degeneration undergoing repair, he would have no justification in assuming the same process for the heart. But anyone who had much practical acquaintance with pathological histology would hesitate to build on such a shaky foundation as Rindfleisch’s very fanciful drawing.

These specimens which we have given serve to show the sort of thing this paper is. There is no attempt at exactitude, at distinguishing between facts and theories, and the whole, from the title-page, where not only the author’s name and qualifications, but a list of his published works is given, to the final physiological flourish, in which we are told it is absurd to attribute anæmia to disease of the stomach, as this organ can be readily dispensed with by anyone who has a pancreas, shows that the author writes more for the uneducated public than for the profession, or if at all for the latter, only for the most ignorant of its members.

We regret to have to write in this way of this paper, but when it is sent to us for review, we feel it our duty to say what we think. It is by such work that the level of British medical journalism is kept so low, and we consider it simply a profanation of the science of physiology to invoke it in support of theories such as those on which the hypothesis of “Heart Starvation” is based.

Abridged Therapeutics. founded upon Histology and Cellular Pathology. By DR. W. H. SCHÜSSLER. 1880.

THIS is a tissue of homœopathic absurdities, which it would be waste of time and space to criticise, notwithstanding it has attained to the dignity of a fifth edition. The author must have an enviable turn of mind, for, in the Preface to the third edition, he says, “As every innovation gains by opposition, it is a source of satisfaction to me that some opponents have appeared against my Therapeutics.”

PART III.

HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND DISEASES OF WOMEN.

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THE OPERATIVE TREATMENT OF PROLAPSUS UTERI.^a

THE first attempt to cure prolapse by operative interference was made by Gérardin in 1823, who cauterised the vaginal wall. Fricke in 1832 vivified the posterior third of the labia majora on each side, including the posterior commissure, and brought them together with interrupted sutures. Phillips applied fuming nitric acid, and Dieffenbach, Henning, Kennedy, and Velpeau, the actual cautery, so as to destroy long strips of the vaginal wall parallel to the axis of the canal; quite lately Rokitansky has removed the folds of the vagina by means of elastic ligatures.

Marshall Hall was the first who performed colporrhaphia anterior, and a full description of the operation was given by Marion Sims in his book on uterine surgery. Nearly all modern German authorities have reverted to Sims's original plan—viz., the excision of an oval portion of mucous membrane from the anterior vaginal wall. Sims considered that the success of the operation was due entirely to the use of the metallic suture. We know, however, that the most essential points to secure success are, careful freshening of broad flat surfaces and the insertion at short intervals of alternate deep and superficial sutures.

The patient should be placed in the position for the operation for stone, and the operation is so little painful that Rokitansky,

^a Winckel. Die Pathologie d. weiblichen Sexualorgane. Leipzig. 1880. P. 242.

who has operated 33 times, never uses chloroform. The vagina is first washed out with a five per cent. solution of carbolic acid, and from time to time during the operation the freshened surface is irrigated with a similar solution. The anterior vaginal wall is then fixed with a vulsellum, or bullet forceps, at the highest point to which it is intended to freshen the mucous membrane, and drawn downwards, so as put it on the stretch. Winckel has frequently effected this object by passing a ligature through the cervix uteri and drawing it firmly downwards. The mucous membrane it is intended to remove should then be marked out with a scalpel, and separated from below upwards—that is to say, from the cervix towards the orifice of the urethra. The freshened surface should extend from just below the cervix to within 2 cms. of the orifice of the urethra, and measure about 9 cms. long and 7 cms. broad (3·5 by 2·7 inches). It can to a great extent be separated by the handle of the knife. The whole surface of the wound should then be made smooth with a pair of scissors, and the ligatures—alternately superficial and deep—should be inserted at a distance of 1 cm. (0·39 inch) or less from each other. The deep sutures, moreover, should not go quite to the bottom of the wound, by which means the two surfaces are brought more accurately together. Winckel uses *fil de Florence* for the sutures, and inserts them at 5–7 mms. distance from each other. After the surfaces are brought together the whole wound is again disinfected, and then returned into the pelvis. If necessary the catheter is used afterwards, and any incontinence that may follow soon passes away. Winckel allows the patient to get up on the 12th–14th day, but the stitches are not removed for two or three weeks. He has never seen a bad effect from the operation, and the wound, with the exception of very small portions here and there, always heals by first intention.

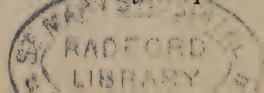
This operation is not, however, sufficient by itself to prevent the recurrence of the prolapse, but requires to be supplemented by a somewhat similar operation on the posterior wall. Indeed some authorities consider that it is also necessary to amputate a portion of the cervix uteri, which is often lengthened by the dragging of the vaginal wall. Winckel, however, agrees with Rokitansky that this latter is unnecessary, as the elongated cervix rapidly returns to its normal size as soon as the prolapse is cured. In one case, given by Rokitansky, the uterus, which before the operation for prolapse measured 17·5 cms., became reduced in thirteen days to 10 cms.

During the last fifteen years there have been several methods of operating proposed. Three of these—viz., those of Simon, Hegar-Kaltenbach, and Bischoff—aim, first, at narrowing the vagina; second, at giving it a sudden bend forwards; and third, at strengthening the recto-vaginal septum. The method proposed by Winckel aims much more at obtaining the first two than the third.

Simon's operation (*vide* diagram, p. 435) consists in freshening, with the aid of his fenestrated speculum, a five-sided figure on the posterior vaginal wall, the base of which is formed by the junction of the skin and the mucous membrane of the vulva, and measures 5–6 cms., and which extends about the same distance into the vagina, but is less broad at the top than at the bottom by about 1 cm. The surfaces are then united with alternate deep and superficial silk sutures. There is often a good deal of blood lost during the operation, and the time occupied is from 2–3 hours; the stitches are removed from the 4th–10th day.

Hegar and Kaltenbach's operation (perineauxesis) (*vide* diagram, p. 435) differs from Simon's in the shape and length of the surface vivified, which is triangular and reaches from the posterior commissure to within from 2–3 cms. of the cervix. They use wire sutures, and do not pass the deepest sutures quite to the bottom of the wound. After the operation the vagina is washed out with chlorine water, but this is not repeated unless the discharge becomes offensive and profuse. The bowels are moved on the 3rd–4th day. The perineal sutures are removed on the 3rd–5th day; the vaginal ones not before the 14th–21st day.

The third method, that of Bischoff, or colpoperinæoplastis (*vide* diagram, p. 435), is much more complicated. This operation consists in first dissecting up a tongue-shaped flap of mucous membrane from the centre of the posterior vaginal wall. The point of this flap should commence 2 cms. above the fossa navicularis. Its length should be 4–6 cms., and its width at the base $2\frac{1}{2}$ –3 cms. It should be dissected off from below upwards, but should remain intimately united with the vaginal wall at its base. An incision is then made on each side, reaching from the extremity of the base of the flap to the centre of the labia minora, and the whole of the triangle of mucous membrane formed by this line, the middle line of the posterior wall of the vagina, and the line formed by the junction of the skin and mucous membrane of the labia majora, removed on both sides. The edges of the tongue-shaped flap are now united by deep



sutures to the upper side of this triangle on each side. The perinæal sutures are then introduced, the two upper ones passing through the tip of the tongue-shaped flap. After the operation the patient is kept in bed for a fortnight, the bowels being moved daily. At the end of this time the perinæal sutures are removed, and those in the vagina at the end of three or four weeks. This operation is often most difficult, requiring as a rule from one and a half to two hours for its performance. There is considerable hæmorrhage, but good union is obtained, and the results are most satisfactory.

Winckel thinks that though such operations may be successful in retaining the prolapse, they might lead to dangerous rupture high up in the vagina in any subsequent labour. His operation, therefore, extends only from 2-2.5 cms. upwards from the remains of the hymen. First of all, the woman being in the position for the operation for stone, a metal catheter as thick as the thumb is passed into the vagina, with which the anterior wall is pressed forwards and the posterior wall drawn upwards. The labia majora are then separated by two assistants, and an incision is made on each side along the border of the hymen from the mesian line posteriorly to within 3-4 cms. of the orifice of the urethra anteriorly. A second incision is then made parallel to this one and 2-2.5 cms. above it. The mucous membrane in the mesian line posteriorly is now divided between these two incisions, and the flaps of mucous membrane dissected off from below upwards till they remain attached to the vagina by their narrow upper border only. The length of each of these flaps is about 6 cms., and they are then both shortened to about 3 cms., and their lower borders brought together by two to three sutures, thus forming a sort of bridge over the freshened vaginal surfaces. These surfaces are then brought together in the mesian line by means of deep sutures, beginning posteriorly. The edges of the flaps of mucous membrane forming the bridge are also joined to the edges of the freshened vaginal surfaces, so that finally the lines of junction form the letter T. The sutures are not removed till the 12th-16th day, during which time the patient is confined to bed. Winckel claims for this method that it is the least bloody of all such operations, besides being easier, requiring only about an hour for its performance; also that it changes the direction of the vagina more than any other operation, which he thinks is the chief factor in retaining the prolapse. The posterior vaginal wall is, however, only strengthened

for about 2 cms. of its length. Two of his patients have borne children since being operated on. In each case an incision was made in the mesian line in order to allow the child to pass, and the cut surfaces were brought together again after the child was born, and united completely.

At the meeting of German Gynæcologists at Baden, in 1879, it was evident that opinion in Germany at least was almost unanimously in favour of operating on prolapsus uteri, and the favourite operation was that of Hegar, which he himself has performed in 136 cases with almost invariable success.

Besides these operations Prof. Seyfert has proposed to cure cases of prolapse by artificially producing retroflexion; and Prof. P. Müller, of Berne, has quite recently endeavoured to obtain the same end by making an incision through the abdominal walls, then elevating the uterus through this incision by means of the sound, amputating the body of the uterus, and fixing the stump of the cervix by means of a clamp, as is done in ovariectomy, in the abdominal wound. The objections to this last operation are sufficiently obvious.

In order to render more certain the healing of the deep portions of the surfaces vivified in these operations, Dr. Werth, of Kiel,^a has proposed to unite the bottom of the wound by means of sunken catgut ligatures (*versenkten Ligaturen*). These are introduced below the level of line of ultimate union, the ends tied and cut short, and then the edges of the wound brought together so as to include them entirely between the freshened surfaces. This method certainly aids us in obtaining union of the entire surface by first intention, and is therefore most deserving of notice. All these operations are, however, condemned by Dr. Galabin as being usually too serious for the object in view.^b

In France Dr. Lefort's operation has lately been performed several times successfully. It consists in freshening a surface measuring 6 cms. long and 2 cms. broad on the anterior and posterior vaginal walls, and bringing them together with sutures, thus dividing the vagina into two parallel canals. This operation nearly obliterates the vagina, and is therefore quite unsuited for younger women. It is, however, by no means a new operation, for the late Prof. Spiegelberg had performed an exactly similar one as long ago as 1872.

^a *Centralblatt f. Gynäkol.* 1879. No. 23.

^b *Obst. Journal.* No. LXVI. P. 349.

Winckel is convinced that the proper method of operating on cases of prolapse when complicated with marked cystocele and elongation of the cervix uteri is by a combination of colporrhaphia anterior and posterior. This he has himself done in fifteen cases, in eleven of which the result was perfectly satisfactory.

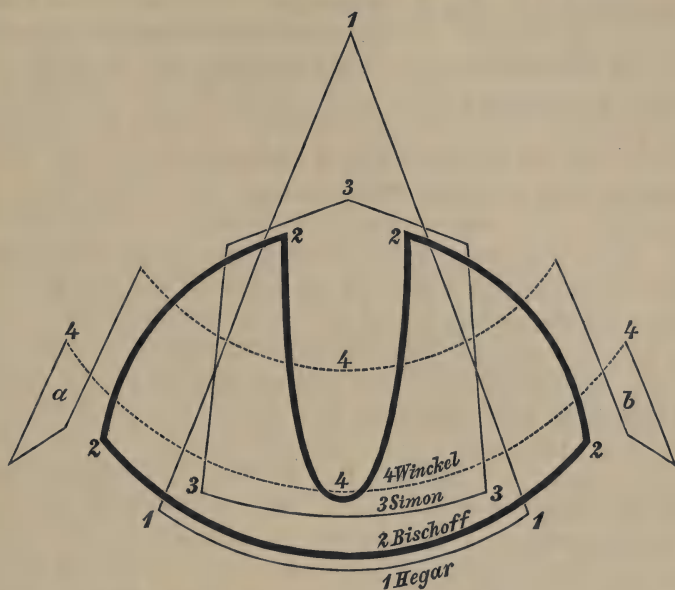
This subject has also been ably and exhaustively handled by Prof. A. Martin, of Berlin,^a who, however, is not contented with any of the operations already described, but has introduced a method of his own. The chief modification is that he freshens two parallel longitudinal flaps from the posterior wall of the vagina—one at either side of the posterior columnæ rugarum. His object is to leave the latter intact, as he thinks it one of the chief supports to the uterus. The perinæal portion of the operation differs very little from those already described. If the uterus be enlarged, it should be reduced by appropriate treatment before operating. The best method of attaining this is often by amputating the elongated cervix; and, as he considers the first step in prolapse of the uterus is its being dragged down by a relaxed and hypertrophied anterior vaginal wall, he recommends that the operation on the posterior wall should be preceded by colporrhaphia anterior. This may, however, be performed at the same time as the posterior operation, the whole thing requiring from one and a half to two hours. He has always used silk as material for the ligatures, but considers that the proposition made by Werth, of bringing the deep surfaces of the wound together by sunken catgut ligatures, is in every way worthy of our attention.

The after-treatment is most simple. The catheter is used if the patient cannot make water easily while lying on the back. The bowels are moved daily from the second day on, and the wound washed externally with carbolic acid solution, but no vaginal injections are made for some days. The patient is not allowed out of bed for three weeks, and the vaginal sutures are not removed till considerably later. Martin is of opinion that the large majority of cases of prolapse should be operated on, the operation of colporrhaphia posterior being preceded, when necessary, by lessening the size of the uterus itself, and removing the redundant portion of the anterior vaginal wall by the operation of colporrhaphia anterior.

For further details of these operations the reader may consult Fritsch's work, "*Die Lageveränderungen der Gebärmutter*,"

^a Volkmann's Sammlung. klinischer Vorträge. No. 183-84.

Stuttgart, 1881, p. 194; and for the operation for simple or complicated rupture of the perinæum, Hildebrand's "Krankheiten der aeußeren weiblichen Genitalien," Stuttgart, 1877, p. 83.



The accompanying plate gives the shape and comparative size of the surfaces freshened by the different operators, whose names are placed against them. It shows very plainly that one set of operators hope to cure the prolapse by restoring the perinæal body, while the others, represented by Winkel, trust almost entirely to changing the axis of the lower third of the vagina.

Heugebauer has lately published^a the results of twelve cases of prolapse he has operated on by a method of his own. This consists in freshening a surface, 4 cms. long and 1.8 cms. broad, on the anterior vaginal wall, and a similar one corresponding to it on the posterior wall, and bringing these together by means of sutures. A similar operation has been extensively performed in France by Lefort.

The writer of this report has lately, through the kindness of Dr. Kasprzik, had the opportunity of seeing Hegar's operation performed in his own clinique. The points that seemed to him most striking were, first, the great ease with which colporrhaphia

^a Centralblatt f. Gynäkologie. No. 1. 1881.

anterior was performed by drawing down the anterior wall of the vagina with an American bullet forceps, and catching the fold of mucous membrane thus formed between the blades of a pair of long forceps, then passing the sutures below the forceps, and finally cutting it away with the portion of vaginal wall still between the blades, and tying the sutures. This resembles very much Ricord's operation for phimosis. The operation on the posterior wall, or Hegar's own operation, was wonderfully simplified by fixing the three points of the triangular flap of mucous membrane that was to be removed with American bullet forceps. In this way the point furthest up in the vagina was drawn down to a level with the orifice of the urethra, and the whole surface to be vivified thus came to lie almost on a level with the orifice of the vagina. The greatest importance was placed on having perfectly smooth surfaces, and of allowing no hæmorrhage to take place between them once they were brought together. With this object the sutures, both superficial and deep, were inserted at very short distances (about $\frac{1}{4}$ inch) from each other, and if, on squeezing the parts, any blood oozed out between two sutures, an additional deep suture was immediately introduced. The operations on the anterior and posterior walls were done at the same sitting, the woman being under the influence of bichloride of methylene, which is the anæsthetic now used by Hegar almost to the entire exclusion of ether or chloroform. The perinæal sutures are not now removed till the 8th day, and the vaginal ones not for a month or six weeks, the patient being generally sent home in the interval.

However, even when the freshened surfaces have united by first intention, they sometimes again separate from the amount of traction that is put on the cicatrix. This result may be generally avoided by freshening a large enough surface, and passing the sutures deeply. In order to obtain a still firmer cicatrix, Fritsch^a has lately introduced a new method of operating on the posterior wall, which is nothing but the application of Sims' original operation for cystocele to the prolapse of the posterior vaginal wall. The great advantage Fritsch claims for it is that in cases where there is a hypertrophied vaginal wall the redundant portion is excised, and as the whole thickness of the wall is removed, the subsequent cicatrix is much firmer. The portion of vaginal wall to be removed is caught up in a forceps, made similar to the one for the anterior vaginal wall, the finger in the rectum preventing

^a Centralblatt f. Gynäkologie. 1881. No. 18.

any of the rectal mucous membrane being included, the sutures are then passed, and the rest of the operation carried out almost exactly like that for colporrhaphia anterior, already described. A good deal of blood is lost during the operation, but as it is quickly performed, the patient probably loses less than in the more common operation. If done under antiseptic precautions, there is not much danger involved, even if Douglas's space should be opened by mistake.

ON THE PROPER METHOD OF CONDUCTING THE THIRD STAGE OF LABOUR.

This question, which is of so great importance to every practitioner, and about the best method of conducting which there are, even in this country, very different opinions, has lately been engrossing the attention of the profession on the Continent. The starting-point of this was a paper by Prof. Dohrn,^a of Marburg, in which he maintains that the most modern investigations as to the manner in which the placenta becomes separated and expelled, if left to nature, show that Credé's method requires modification and limitation. He holds that the placenta is not separated by the last pain, but that it is pressed gently towards the os by the formation of a clot above it, during which process the membranes are gradually detached without being torn and left behind. During this time Credé's method can only do harm, for external pressure should not be used to expel the placenta until the greater part of it is well in the os. This process requires at least a quarter of an hour, during which time the uterus should be controlled by the hand laid gently on it, which quite prevents any danger of internal hæmorrhage.

This paper soon elicited a reply from Dr. Fehling,^b in which he accuses both Dohrn and also Runge^c of having made the mistake of supposing that the essence of Credé's method consists in the rapid expulsion of the placenta. This, Fehling says, is not the case, and quotes Credé himself as follows:—"I have always succeeded in from a quarter to half an hour in exciting powerful uterine contraction," and then only, as the text shows, does Credé grasp the uterus and press out the placenta. Everyone, moreover,

^a Deutsche med. Wochenschrift. 1880. No. 41. Centralblatt f. Gynäkologie. 1880. No. 23.

^b Centralblatt f. Gynäkologie. 1880. No. 25.

^c Berl. klin. Wochenschrift. 1880. No. 44.

who has been at Credé's clinique knows that he was not there taught to express the placenta immediately, but, as a rule, along with the third or fourth after-pain, by which time it is already separated. Ever since Fehling was appointed to Stuttgart, he has taught the midwives "Credé's," or, if anyone prefers to call it, "Spiegelberg's," method of conducting the third stage—viz., placing the hand on the fundus as soon as the head is born, and controlling it by gentle friction, while making no attempt to press off the placenta before the third or fourth after-pain. To carry out the method properly, the uterus should from time to time be examined after the expulsion of the placenta, and gentle friction made with the hand over the fundus, for one or two hours after labour. At the same time, there can be no doubt that too early pressure frequently causes some of the membranes to be separated from the mass of the placenta, and left behind in the uterus. This, however, often happens, even when no pressure has been used. Nor is it rare to see the placenta expelled immediately after the birth of the child, with the whole chorion torn off from it, and left behind in the uterus.

The question, therefore, to determine is, which is the better method—early expression, with the chance of some small portions of membrane being left behind in the uterus, or the purely expectant plan, with the risk of what is often a very considerable amount of hæmorrhage. It is greatly to be regretted, he thinks, that in the new Prussian official manual for midwives traction on the cord is still recommended, and the rule laid down that the midwife should wash and dress the child before seeing to the expulsion of the placenta, which practice, he considers, frequently leads to the most serious hæmorrhage. At the same time, he admits that he has frequently noticed that after expression of the placenta, the lochia, which ought, according to the text-books, to become serous from about the fifth to the eighth day, and from that time on thick and of a grayish-white colour, become red and copious about the eighth or tenth day, and remains so, in spite of treatment and keeping the patient in bed, for 3–5 weeks. He has assured himself by dilatation and digital examination, that this hæmorrhage is not due to retention of placenta or membranes, and is quite at a loss to what to refer it, unless it be the expression.

To this Runge^a answers that he never spoke or wrote against

^a Centralblatt f. Gynäkologie. 1880. No. 26.

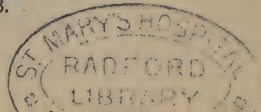
Credé's method, but only against its being put into practice immediately after the birth of the child, as Fritsch has recommended in the second edition of his "Midwifery." He is glad to find that his (Runge's) practice is almost identical with that recommended by Fehling. For it is almost the same thing to express after fifteen minutes, as he does, as to express with the third or fourth after-pain, the essential point being that the expression should not immediately follow the birth of the child. He welcomes Dohrn's paper as most opportune;^a for he thinks that, though Credé's method has been almost universally adopted, there are still very important differences of opinion as to the exact time when it should be put into practice. Thus Credé and Schroeder recommend expression soon after the child is born, while Fritsch would allow no pause at all between the birth of the child and the expression of the placenta. For some years Runge followed Fritsch's directions implicitly, with the result that some portions of the membrane were usually torn off and left behind in the uterus, leading to all sorts of subsequent complications. In more recent years the placenta has not been expressed for about 15 minutes, and all such complications have ceased. The great advantage of expression is that it makes any introduction of the hand or fingers into the lately wounded vagina unnecessary.

This controversy, in the course of which the accuracy of Prof. Schultze's theory of the manner in which the placenta is expelled came in for considerable criticism, naturally led to his entering the lists in its defence.^b He denies that Dr. Matthews Duncan has disproved his theory, but thinks, on the contrary, that he fell into the mistake of considering that the most desirable way—that is, without hæmorrhage—was the only natural way. He does not deny that separation sometimes takes place in the way described by Dr. Duncan, but says it is rare compared to the other, which must therefore be looked on as the normal one. His views are supported by the investigations of Lemser^c on the position and shape of the placenta in the uterus in cases of spontaneous separation. Credé, he says, objects to the idea that the hæmorrhage should be looked on as playing any part in the separation of the placenta. But, if we admit the hæmorrhage

^a Berliner klinische Wochenschrift. 1880. No. 44.

^b "Ueber den Mechanismus der spontanen Auscheidung der Nachgeburt, und ueber der Credéschen und des Dubliner Handgriff." Deutsche med. Wochenschrift. 1880 No. 51 u. 52. Centralblt. f. Gynäkologie. 1881. No. 3.

^c Dissertat. Giessen. 1865.



itself, there can be no doubt of its being capable of affecting the separation and expulsion. He thinks the part of Credé's method which consists in making pressure on the uterus while it is contracting, in order to increase the force of the pain, and so press out the placenta, is logical and worthy of commendation. By such a practice the third stage is shortened and any serious hæmorrhage prevented. But the second part—viz., the forcing down of the uterus into the pelvis in order to drive the placenta along and out of the vagina—is not free from danger, and should not therefore be practised, being likely to lead to stretching of Douglas's fold, followed by parametritis posterior and all its consequences. To it is also chiefly due the extraordinary frequency with which portions of the membranes remain behind in the uterus; for when the pressure is taken off the fundus, on the placenta escaping from the vulva, the membranes which are still adherent to the uterus are drawn suddenly upwards in the direction of the axis of the vagina. Hence, Schultze recommends the old method of introducing two fingers to remove the placenta from the vagina, once it has got there, and does not think that in these antiseptic days there should be the least danger in such a proceeding. The Dublin method, which the late Prof. Spiegelberg so warmly recommended—viz., grasping the fundus firmly as soon as the head is born, and not removing the hand till the placenta is expelled—he considers most excellent. By it the uterine wall is made to follow down the child as it escapes and the placenta as it becomes detached, which lessens the hæmorrhage, and is perhaps able to bring about what Duncan has described as the most desirable method of expulsion of the placenta. This idea is supported by the results obtained by Dr. Salin at the Stockholm Hospital, where this method has been introduced, where the greater number of placenta are expelled in the manner described by Dr. Matthews Duncan.

To these criticisms Credé himself replied, first in the *Deutsche med. Wochenschrift*,^a and again at more length in the *Archiv für Gynäkologie*.^b He commences the latter paper by saying that the objections which have been brought forward do not apply to his method at all, and only serve to show how imperfectly it is understood even at the present day. The origin of his method was as follows:—Shortly after he was appointed to take charge of the

^a Deutsche med. Wochenschrift. 1880. No. 45.

^b Archiv f. Gynäkologie. Band XVII. P. 260.

cases at the Berlin Obstetrical Polyclinique, he happened to be called several times in succession to cases of hæmorrhage, supposed to be due to adherent placenta, and in which it could not be removed by any of the ordinary methods. In order thoroughly to understand these cases he examined the uterus first through the abdominal walls, and found it large, relaxed, and full of blood. The result of the tersely active manipulation of the fundus, however, was sufficient to excite powerful contraction which violently expelled the whole contents of the uterus.

Credé confesses that he was at the time quite ignorant of the importance laid by some English (he might have said Irish) obstetricians on exciting artificial uterine contractions by external manipulation in the third stage of labour; still no one had up to that time insisted on the importance in every case of effecting the expulsion of the placenta by external pressure alone. The very favourable result obtained in these cases determined Credé to apply it to every case of labour, and he soon found that the placenta might be expressed with the first or second after-pain, though more usually with the third. He was further in the habit of keeping the hand on the fundus for some time after the expulsion of the placenta, thus ensuring permanent uterine contraction. Soon *post partum* hæmorrhage and bad after-pains quite disappeared from his practice, as also those cases where fever in the puerperal state was due to the manual removal of the placenta for hæmorrhage or supposed morbid adhesions.

Credé first described this method in 1853 in his "*Klinische Vorträge über Geburtshülfe*" (v., p. 599) in the following words:—"The simplest and most natural method of expediting the expulsion of the placenta is by exciting the inactive uterus to contract powerfully. A single energetic uterine contraction finishes the whole matter." He thinks perhaps that this description was not sufficient to incite others to give the method a fair trial. However, after eight years further experience, both as director of the lying-in wards in the Charité at Berlin and also at Leipzig, he read a paper on the subject in the year 1860 before the German Association of Naturalists and Physicians, and afterwards published it in the *Monatsschrift für Geburtskunde*. "The most important point is to make the pressure exactly at the right moment. The hand is first laid softly on the hypogastric region and gentle friction applied to the fundus uteri over as large a surface as possible until the uterus is felt to contract under it. The fundus should then be grasped

by the hand with outstretched fingers, and, if that is not sufficient, with both hands, and when the uterine contraction is at a maximum firm pressure in the direction of the hollow of the sacrum should be made on the walls and fundus." This causes the expulsion of the placenta and any blood clots that may be present; but he continues—"To press on the uterus when it is not contracting, in order to expel the placenta, is altogether wrong, and moreover will not attain its object."^a He further lays it down that the uterus should expel the placenta entirely itself, the sooner after the birth of the child the better; if it fails to do it, it must be compelled—the manual removal of the placenta being, however, strictly confined to those rare cases where Credé's method, skilfully applied, has failed.

Dohrn's chief objection is that, according to Credé, the placenta is to be expelled as soon as possible—in fact, "the sooner the better," and that such a practice frequently leads to a portion of the membrane being left behind in the uterus. To this Credé answers that Dohrn's and Runge's imperfect way of carrying out his method and not the method itself are responsible for the bad results these authors have reported.

He further thinks that Schultze has not proved his case against Matthews Duncan with regard to the way in which the placenta is naturally detached. Indeed it is quite immaterial to his method how the placenta is expelled, if only we are not asked to consider the hæmorrhage as a most useful and necessary aid in the expulsion. To Schultze's objection to pressing the fundus downwards—viz., that it is likely to do harm, Credé answers that, as Schultze confesses he has never tried it, he can scarcely be considered a very competent judge. He also entirely disagrees with his idea that the introduction of either midwives' or doctors' fingers into the vagina is, in the present state of our knowledge of antiseptics, free from danger, but thinks, on the contrary, that we shall never attain to such a state of things. Every teacher should impress on his pupils the importance of avoiding every unnecessary manipulation of the genitals of a woman, whether during labour or in the puerperal state. His objections to the Dublin method are, that it is not always sufficient to cause the expulsion of the placenta, and that, as it requires more than two hands to be constantly employed, it is more suited to lying-in hospitals than to the exigencies of general practice, when the midwife has to depend entirely on herself. He

^a *Monatsschrift f. Geburtskunde.* 1860. Band XVI. S. 345.

still maintains that the placenta should be expelled *as soon as possible* after the birth of the child. The best thing that could happen theoretically would be that the placenta should be expelled by the same pain that expels the child, and that the uterus should then remain contracted. In reality, however, a state of relaxation and loss of excitability of the uterus follows the birth of the child, which is increased by the sudden cessation in the action of the abdominal walls. If we now leave the expulsion of the placenta entirely to nature it is very rarely that it takes place in a quarter of an hour, the time required being generally much longer; and not infrequently the natural forces entirely fail to expel it. During this period of relaxation and want of excitability there is great danger of hæmorrhage; and his experience, he regrets to say, differs entirely from Dohrn's on this point.

To the charge that his method favours the retention of portions of the membrane, Credé answers that it is by no means an uncommon thing to see the whole of the chorion left behind, even in cases where the expulsion of the placenta has been left entirely to nature; and this accident happens much more frequently in cases where the placenta is removed by the hand from the vagina than in those in which it is pressed out from above. Indeed the stronger the contraction of the uterus the quicker and more perfect will be the separation of the membrane; and, since his method causes firm contraction of the uterus, it must tend to the speedy and complete separation of the membranes rather than to their retention.

"Is it, however, a fact," he asks, "that retention of a portion of the chorion is really such a dangerous accident as Dohrn and Runge would have us believe?" To this question he has no hesitation in answering in the negative, and brings forward the results of his own experience in proof of this assertion. Thus his practice has been to permit the removal of those portions of retained membrane only which were readily reached by the finger, and which came away when gently pulled on. If they are firmly adherent high up in the uterus he lets them remain there, and has laid it down as an absolute rule in his clinique that the hand must never be introduced into the vagina, much less into the uterus, to remove any such retained portions of membrane. He endeavours, by friction over the fundus, the administration of ergot, and the use of frequent vaginal injections, to obtain good uterine contraction and to prevent infection; and has always found that the portions

of membrane left behind are expelled spontaneously during the first few days of the puerperal state, without having given rise to any bad symptoms. We may, perhaps, get foetid lochia, and a slight rise in the pulse and temperature, but the subjective and objective symptoms of the patient remains good. In proof of these assertions he gives the results of 2,000 cases thus treated, in 18 of which the whole of the chorion, and in 78 of which portions of the same membrane, were left behind in the uterus. In 91 of these cases the expulsion of such retained membranes was left to nature, while in 5 the whole afterbirth was removed from the vagina, on account of sudden hæmorrhage due to atony of the uterus. Of the 91 cases left entirely to nature, 81 left hospital on the usual day—viz., the twelfth, and the 10 others somewhat later, being kept on account of some complications which could scarcely be said to have any connexion with the retention of the membranes. In no case were there any symptoms of general infection. Slight rigors were often noticed, and in several cases slight hæmorrhage, but this latter cannot be set down to the retention of the membranes, but rather to the relaxation of the uterine walls, which caused the retention. Not one of these patients became seriously ill, not one was infected, not one died; and if the temperature and pulse had not been taken it would never have been supposed that there was anything the matter with them.

While the retention of portion of the membranes is thus free from danger to the patient, it is quite otherwise with the manual extraction of such retained portions, which may itself very readily lead to infection.

The average duration of the third stage in these 2,000 cases was $4\frac{1}{2}$ minutes; and in 1,979 cases the placenta was removed by external pressure alone. He has never seen the least bad consequence follow this practice, which, on the contrary, has reduced the number of cases of secondary hæmorrhage to a minimum, and made cases of severe after-pains quite the exception. Such has been Credé's practice now for more than 30 years.

This is not, I think, the place to criticise Credé's method or to defend the Dublin method from the charges Credé brings against it. Suffice it to say that the method of exciting the uterus to contract and expel the placenta by making friction and pressure over the fundus has been practised in the Rotunda Hospital in all cases of hæmorrhage or delay almost from time immemorial. Credé deserves the credit of having found out this fact for himself,

though it had been published long before he thought of it,^a and of having applied it to effect the expulsion of the placenta in every case; but his chief title to praise seems to me to be that he recognises the importance of avoiding all unnecessary introduction of the hand or fingers into the vagina immediately after labour, and thereby eliminating one great source of septic infection.

Before closing this subject I would like to notice the method at present practised in Prof. Freund's Clinique at Strasburg, which is as purely expectant as Hunter's, and an account of which was quite lately given by Dr. Kabiscke in the *Centralblatt f. Gynäkologie*.^b This practice is upheld on the ground that the expulsion of the placenta is as much a physiological act as the birth of the child, and consequently should be left entirely to nature. Indeed the accusation is again brought against Credé's method that it increases the danger of retention of portion of the membranes, which, however, as we have seen, Credé himself does not think very dangerous or important.

In proof that under the expectant treatment the separation of the membranes is more perfect than when any means is taken artificially to hasten their expulsion, he compares Schroeder's account of the appearance of the membranes when expelled with the result of their own experience at Strasburg. Thus Schroeder says that in favourable cases we find thick shreds of the decidua vera over nearly the whole of the external surface of the membranes, while at other parts it is entirely wanting; at Strasburg, however, they find that the decidua vera forms by far the greater portion of the entire membrane—indeed the thickness of the two decidua is three or four times as great as that of all the rest of the membranes put together. That in such negatively treated cases the placenta, amnion, and chorion are expelled perfect is taken for granted, the only question that is asked being as to the extent to which the decidua has been separated, and unless the decidua can be demonstrated as an entire membrane the case is looked on as one of imperfect separation of the membranes.

As to how the placenta is normally expelled he says that where absolutely nothing has been done to hasten the expulsion, and the case is a typical one, the placenta is always expelled through the os and through the vagina, with the foetal surface coming first. It may, however, be expelled otherwise if any pressure has been

^a Collins's Midwifery. P. 121. Hardy and M'Clintock's Midwifery. P. 221.

^b Centralblatt f. Gynäkologie. 1881. No. 7.

used, and also under exceptional conditions as to position, shape, or morbid adhesion of the placenta. That this is the normal manner of expulsion is proved both by the results of the vaginal examinations made with this object, as also by the fact that when the placenta is expelled, after being a considerable time retained, the uterine surface is covered by coagula, the membranes turned inside out, and the placenta expelled through the place where they were ruptured.

Having thus shown that by this method the separation of the membranes is more perfect than by Credé's method, he next goes on to prove that the method is also free from danger. They can absolutely deny that it leads to either external or internal hæmorrhage, or that there is any danger to the mother from the long retention of the secundines. Thanks to the admirable manner in which labour is conducted by nature, the uterus, in a natural case, when it is healthy, and not mismanaged or interfered with by neighbouring organs, does not require to be grasped by the hand in order to prevent serious hæmorrhage. They have seen no *post partum* hæmorrhage when this expectant method has been strictly carried out. At the same time, if abnormal conditions are present, making hæmorrhage probable, they at once adopt measures to prevent it.

There is also no fear that the retention of the placenta or membranes, even for twelve hours, will in any way injure the mother, though at the end of that time they may be known by the smell to be already undergoing decomposition. The danger that has been hitherto set down to this cause is most probably due to want of cleanliness.

They find, moreover, that convalescence during the puerperal state is most rapid. The amount of the lochia is very small, and the discharge changes its colour very early. It is probable that the many cases of long-continued red discharge which have been noticed by Fehling, in women who were under most perfect hygienic conditions, had probably their origin in retention of the membranes, after Credé's method of expressing the placenta had been put in practice.

The spontaneous expulsion of the placenta takes place in the majority of cases within three hours, and after its expulsion the vagina is irrigated with a five per cent. solution of carbolic acid, any rupture assisted, and then a wad of jute steeped in carbolic acid solution of the same strength is laid up against the vulvæ.

No injections, either vaginal or uterine, are made during the puerperal state.

In cases, however, where there is a probability of *post partum* hæmorrhage the hand is placed over the fundus from the time the child is born, but if no hæmorrhage take place the uterus is neither rubbed nor kneaded. The uterus is then watched for 1-1½ hours, and if no hæmorrhage has then taken place the expulsion of the placenta is left to nature. If the symptoms are such as to demand the immediate removal of the placenta they use Credé's method. If this fails, or if, having practised it, any portion of the membranes is left behind, they then pass the hand in and remove the placenta, or the portions of retained membranes, as the case may be. After this the uterus is irrigated with a two per cent. solution of carbolic acid, and the vagina washed out three times daily with the same solution during the puerperal state.

Finally, he thinks it would be of immense benefit to puerperal women if midwives were better instructed as to the natural way in which the placenta is expelled, as they would then cease to do damage by their ignorant and misdirected attempts to express it by Credé's method.

MASSAGE IN SIMPLE ENGORGEMENT OF THE LIVER.

IN cases of chronic hyperæmia of the liver, where there is neither cachexia nor ascites, Dr. Durand-Fardel recommends, in addition to the free use of Vichy waters, local douches to the hepatic region and massage. He does not consider pain or tenderness to pressure a contra-indication, or jaundice, which in these cases is yellowish rather than of a green hue. The douches should be given daily, with a pressure graduated to the sensitiveness of the part, and of a temperature of 95° Fahr. The massage is begun by rubbing lightly the whole abdomen; then the hepatic region is rubbed simply by the hand, then the integument over it is kneaded, and lastly the liver itself. By-and-by its free border can be grasped in the hand. The douches and massage are followed by a feeling of comfort. The treatment should be persevered in for at least a month. It is claimed that the obesity which occurs on the upper parts of women's chests and shoulders about the time of the menopause may be checked by this procedure.—*Revue Médicale*.

S. W.



PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

Eccentric Hypertrophy of the Heart.—DR. WALTER G. SMITH said : This heart, which is an extreme example of eccentric hypertrophy, was taken from the body of a watchmaker, aged twenty-six, who died on the 9th of March. When leaving the hospital in the morning I was told that a patient had been admitted for me, and on glancing at the young man I saw him sitting on the sofa in great distress, panting for breath and deadly pale, but still able to walk. He had had an attack of rheumatic fever two and a half years ago, and was then told that his heart was affected. From that time he was subject to violent palpitations and breathlessness on exertion. He became so delicate from this cause, and from being occasionally knocked up with rheumatic pains, that he was advised, twelve months ago, by some doctor, not to marry. That salutary advice he did not follow ; and shortly before he was admitted to the hospital his wife was confined. Last November—*i.e.*, four months before his admission—he had another attack of rheumatic fever, and he never regained his health afterwards. He was unable to work, and suffered particularly from pain about the chest, palpitation, and great dyspnœa, on exertion. Latterly the dyspnœa became constant and aggravated, and his strength failed him. When admitted he presented a pasty, emaciated appearance, and was scarcely able to walk. His respiration was quick and short, and he had a very diffused and heaving cardiac impulse. His pulse was 110, and a loud double aortic murmur was heard, the second element of the murmur being the louder. He had slight pains about the shoulders and knees. No change happened until eight o'clock that evening, when he was seized with very severe pain in the præcordia, attended with violent and irregular action of the heart and great distress of breathing. He became

ashy pale, and his pulse assumed an undulating and irregular character. Mr. Russell, the medical resident, dry-cupped him over the heart, and gave him nitrite of amyl. This produced instant relief; the pain disappeared, but the pulse maintained the same character as before. Things went on well until two o'clock, a.m., when he was suddenly seized in exactly the same way, and died in three minutes, after a few shrieks and struggles. At the autopsy there was nothing worth noticing in any of the organs except the heart. The lungs were slightly congested; the heart was enormously enlarged—it weighed four pounds when full of blood, and, when washed empty of blood, two pounds and three-quarters, or forty-four ounces. The pericardium was universally adherent, and at the same time could be, in parts, by a little force lifted off from the subjacent muscular tissue. The condition of the valves was as follows:—There were a few milky patches on the right side of the heart, and some thickening of the tricuspid, but nothing else notable about it or about the pulmonary sigmoid valves. On the left side of the heart the aortic valves seem extremely thickened—they were incompetent—and on one of the cusps was a large calcareous nodule, which would have soon made its way through the valve. The mitral valve is markedly constricted, barely admitting two fingers; and, from a heart of such magnitude, this was a considerable degree of mitral stenosis. The auricles are not merely dilated, but decidedly hypertrophied. The thickness of the wall at the middle of the right ventricle was one centimetre, and that of the left two and a half centimetres; in other words, these respective thicknesses are about two and a half times the normal thickness. With reference to the causation of this hypertrophy it is unusual to see such an amount as we have here in connexion with valvular disease. The aorta is only very slightly atheromatous, considering the strain to which it must have been subjected from the enormously powerful left ventricle. I think that certainly two, and probably three, factors must be taken into account in order to explain the enormous hypertrophy—one is the simultaneous valvular obstruction at the two orifices; another is the universal adhesion of the pericardium, clogging and embarrassing the heart's action, and calling forth increased exertion on its part; and the third is the pericarditis—there was also myocarditis—which led secondarily to hypertrophy of the heart. I think the specimen raises the question as to whether, when the hypertrophy reaches such dimensions, some cause for it, other than valvular obstruction, must not be admitted to exist.

DR. HAYDEN.—I believe this enormous enlargement of the heart to be essentially due to a condition of the valves known as *cor bovinum*; but I go further, and say that in almost every case of enlargement of the heart of a notable character, even where there is valvular disease, those factors may be found if looked for. The division of labour made by

Dr. Haughton, not with reference to the heart, but with reference to the muscular organs generally, is eminently convenient. He divided the work of the human body into *opus mechanicum* and *opus vitale*. Under normal circumstances the heart plays its part only in proportion to the needs of the system. But if, as in the case of hard-worked labourers, athletes, and others existing under similar conditions, the valves of the heart be diseased, and the body be also worked inordinately, obviously two factors come into play; and, although we have not been able to find in the history of this case, which unfortunately is incomplete, any proof that this man's habits were of a very active kind, still I think we can hardly quarrel with the assumption that such was the case, otherwise there is not enough in the conditions of the heart to account for its enormous size. With regard to two of the factors mentioned by Dr. Smith as usually playing a part in the enlargement of the heart, I cannot entirely agree. He mentions narrowing of the mitral orifice—which undoubtedly in a degree, but only a minor degree, exists here—as a cause of enlargement of the heart. That is true only with regard to the left auricle of the heart. As to the adhesions, I believe they rather diminish its capacity. I am inclined to think that the adhesions of the pericardium *per se* were scarcely operative in producing the magnitude of the heart. But if, in a case where the organ is partially adherent and the valves diseased, the individual undergoes a great deal of muscular labour, we have all the conditions supplied for producing enlargement of the heart. I believe this heart to be in an early stage of fatty change. It is remarkably flabby, and its weight is considerably added to by the amount of false membrane on its surface.

DR. WALTER SMITH (in reply).—I think the supposition of alcoholic antecedents in this case is answered negatively by the condition of the kidneys, which presented none of the signs usually induced by prolonged alcoholic excesses, and also by the fact that the aorta is very slightly affected with atheroma. We may, therefore, probably exclude renal disease and arterial sclerosis as having been the cause of the hypertrophy.—*March 19, 1881.*

Fracture of the Extra-Articular Portion of the Patella.—DR. BENNETT said: This specimen, of which I possess no history beyond that it was obtained in the dissecting-room, possesses considerable interest from its rarity. The forms of fracture of the patella with which we are familiar are the transverse, the stellate or comminuted, and the vertical. All these involve the cartilaginous surfaces. In this curious specimen, to which I have seen nothing similar, there is a fracture of the extra-articular portion of the patella. This piece of the patella, which projects beneath the cartilaginous surface of the bone which gives attachment to the ligament of the patella, has been fractured transversely, and com-

pletely united by bone. The external surface of the bone presents, on its anterior aspect, a distinct line of union, which to those familiar with such appearances is quite clearly the line of a fracture united. If we trace that line we find it passing round immediately beneath the edge of the cartilage, so that it circumscribes the whole bone. The condition of the bone is such that it became difficult to complete the examination. In attempting to boil the specimen in a dilute alkali—a proceeding necessary, as neither ether nor benzol would dissolve the adipocere contained in its cancelli—I nearly dissolved the whole specimen, so that I had to abstain from carrying out that process further. The specimen is still wet, but we can see the course of the fracture through the bone in a vertical section through its structure. The osseous union that took place is apparent. The interest of the specimen lies in this, that I do not think there is any record of a fracture of the kind. The path of the fracture lies outside the reflection of the synovial membrane, and did not in any way involve the surface of the joint.—*March 19, 1881.*

Typhoid Fever.—DR. HAYDEN said: I have only a few remarks to make on this morbid specimen. It is a portion of the intestinal canal of a young man, aged about twenty years, who died of typhoid fever in the Mater Misericordiæ Hospital a few days ago. He was an inmate of the “Blind Asylum,” near Glasnevin, and I was asked by the Superior to see him. He stated that the boy had been ill for five weeks in bed, complaining of various sensations, and a personal inspection of the patient did not render it at all clear to me what the nature of his illness was. There was no eruption. I was not able to take his temperature, my visit being a hurried one. All that I satisfied myself about was that there was extensive congestion of the left lung, accompanied with mucopneumonia. The patient was exceedingly weak. I had him admitted to hospital that day (14th March), and in the course of the afternoon his temperature was recorded, and found to be 105°. On the next morning it was two degrees less. He had had diarrhœa, but not for some weeks previously. His temperature continued to range between 105° in the afternoon and 103° in the forenoon until the evening of the 15th, being the second after his admission into the hospital. He declared that he felt better, although his temperature was thus high. I felt much uneasiness about his condition. The sister in charge of the ward happened to be at a short distance from his bed, and her attention was suddenly drawn to him by his loud, stertorous breathing. She hurried to his bedside, and found his face congested, and that he was struggling for breath, and evidently at the point of death. He lived, however, for about two hours. When I was called to see him I could not satisfy myself as to the cause of this remarkable change in his condition. There had been no hæmorrhage, no diarrhœa, and no symptom indicating

an unfavourable issue to the case, except the high temperature and the illness of about five weeks. The left lung was congested. It was found impossible to examine the remainder of the lungs and heart, and I regret this exceedingly, because I believe that death was caused in all probability by pulmonary embolism or thrombosis. It is impossible otherwise to account for the suddenness of the death and the character of the symptoms. The part of the intestinal canal which is before you exhibits the conditions which are usually found in typhoid fever at a much earlier period than five weeks. You observe that Peyer's patches near the ileocæcal valve are congested, and the glandules are all enlarged. There is no ulceration anywhere. The patch on the iliac surface of the ileocæcal valve is congested, and its constituent glandules enlarged and distended.

I thought the specimen worthy of exhibiting in connexion with the mode of death. In typhoid fever death occurring in this way is very unusual—it usually follows either from hæmorrhage, protracted diarrhœa, or some thoracic complication. In this case there was the usual complication of congested lung, but sudden death from this cause simply is inconceivable.—*March 19, 1881.*

Sarcoma of the Lung.—DR. WALTER SMITH said: This case presents some unusual features, and is of considerable interest and rarity. The patient was under the care of my colleague, Dr. Head, to whom I am indebted for being in a position to report the case to the Society. The man was the subject of an alternate hemiplegia, involving complete paralysis of the right side of the face, with an incompletely developed paralysis of the left side. The cause after death was found to be localised hæmorrhage into the lower part of the pons Varolii, with consecutive softening above and below. He was also—as was detected at the *post mortem*, and then for the first time—the subject of primary malignant disease of the right side of the chest, with consecutive gangrenous destructive pneumonia of the lower part of the right lung. As the case was not under my own observation I am indebted for the facts to the notes of Mr. Russell and Mr. Hull. The patient was a sailor, a fine largely-built, robust man, who had been at sea for the past nineteen years. He had gonorrhœa twenty years ago, but never had syphilis. He was particularly able-bodied up to two and a-half years ago, when he contracted pleurisy of the right side, for which he was a patient in the Adelaide Hospital. After a short time he went to sea again, but never afterwards completely recovered himself. He got rid of his cough, but always felt his breathing shorter than it was before. He continued pretty well up to the beginning of December, 1880, from which time he dated his last illness. He was on a voyage for a couple of months previously, and had experienced very heavy weather. The

sea frequently broke into the place where he slept, and he was often obliged to turn-in in his wet clothes after his watch. One night, early in December, when he was called on deck after his four hours' sleep, he found the whole of his left side affected with partial loss of power. He was hardly able to work, and when walking kept himself from falling with difficulty. He improved slightly after the first few days, and kept to his work, but noticed that (though he had not lost power to any great extent over his limbs) he had not the same control over the movements of his left side as he had before; and at this time he also noticed that his face was drawn to the left side. He could not completely shut his right eye. Notwithstanding these symptoms he remained for three weeks more at sea, but when he came to Dublin he sought admission into the hospital. His symptoms were then as follows:—He had a feeling of numbness on the left side, with a sense of pins and needles. There was no marked loss of power in the left leg; there was some stiffness, the joints being, as it were, rigid; and he was able to walk, though not very well. There was no loss of power or sensation in the left arm. He had nearly complete right facial paralysis, was unable to close his right eye, and had slight internal strabismus; and there was also complete paralysis of the sixth nerve, so that he could not turn his right eye outwards. On being tested with induced electricity the excitability was found to be normal on the paralysed side. He could not stand with his eyes shut; and he walked like an ataxic man, as if from want of coordination. He put his heels suddenly on the ground. He further complained of noises in his ears. Previous to his illness his hearing had been perfectly good, but he had now become deaf in the right ear. At the end of January his condition was as follows:—He presented a vacant expression, and when he endeavoured to look in front his head and eyes would be turned towards the paralysed side. He complained also of numbness and tingling in the left arm and leg, at the same time he could squeeze nearly as hard with his left hand as with his right—in other words, there was very little motor paralysis. His tongue was clean, his bowels free, and his temperature normal; he also passed his urine normally, and it contained no albumen. In the beginning of February he was seized with slight hæmoptysis and cough, and at the same time dulness was detected for the first time under the right clavicle. Once or twice he spat up an ounce or two of blood, and at the same time œdema of the skin developed itself on the right side. The hæmoptysis soon stopped, and dulness crept down the right side to the nipple. The stethoscope detected no respiratory sounds whatever—there was absolute silence. He now became drowsy and stupid, and he sweated very much on the left side, the line of sweating being very accurately limited by the middle line of the body. There was also factor of the breath, although this was not a very marked symptom. Very little change

occurred in him for a fortnight from that time. He became weaker, however, and towards the middle of March got worse; his breathing became quick and laborious, his right lung became perfectly dull from top to bottom, he sweated continually on both sides, and his temperature, which was previously normal, rose to 102° . He became excessively weak, and died on the evening of the 14th of March. His illness from the first development of the paralysis lasted three months. A careful autopsy was made, and I may dismiss all the intra-cranial parts with the remark that no disease was found anywhere except in the portion of the encephalon which I have on the table. On making a section of the cerebellum and pons, a transverse hæmorrhage was noticed on the right side of the middle line of the pons, and there was a considerable area of softening in its neighbourhood above and below. Coming to the chest, the anterior mediastinum was filled with glutinous lymph. The left lung was perfectly healthy. The right lung presented a remarkable appearance—it was universally adherent to the chest wall by tough lymph and false membrane. There was an encysted empyema containing horribly stinking pus, and there was great difficulty in detaching the upper part of the lung from the chest. On making a section of the lung two-thirds of it were engaged by a lobulated and sharply-circumscribed new growth in the form of nodules, supported by highly-pigmented firm septa. The lower third of the lung was simply rotten, and full of greenish-yellow sanious *débris*, and exhaled a most insupportably foetid odour. There was nothing particular in the abdominal viscera, kidneys, liver, or spleen. His eyes had been examined ophthalmoscopically, but nothing abnormal was found. I believe there are not more than fifty or sixty cases of alternate hemiplegia on record, and consequently the chances of any individual practitioner seeing such a case are very small. The symptoms pointed almost demonstratively to a lesion of the lower part of the pons, for he had alternate hemiplegia and coincident paralysis of the sixth nerve. The fifth nerve seemed to be also engaged, and he had what is rare in ordinary cranial paralysis—namely, complete paralysis of the muscles supplied by the seventh nerve, as complete as takes place in the peripheral form of facial paralysis. Another symptom early observed was the stiffness and rigidity of the limbs without any marked degree of motor paralysis, and there was also the conjugate deviation of the eyes. The thoracic viscera supply an instance of how completely latent the course of malignant disease of the lung may be. The whole duration of that malignant disease in this case was probably not more than two months, for I presume we may date its occurrence from the first hæmoptysis. He had no dulness on his first admission, and yet in the short period I have mentioned a large amount of disease was produced. The whole root of the lung is so involved in the disease that it is difficult to trace its component parts. On slitting up the bronchus I

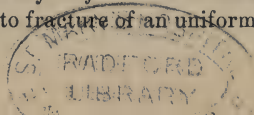
found the malignant growths projecting into it. I think the case is entitled to be regarded as an example of a very rare kind of primary intra-thoracic disease. The new growth is limited to one lung, and occurs on the right, which agrees with the cases recorded. It occurs in a large circumscribed mass, not diffused through the lung in separate nodules; and, lastly, it gave rise, as I believe is the rule in primary malignant disease of the lung, to destructive pneumonia of the lower part of the lung. The cause of the pneumonia is of some interest. I imagine that it was in this case complex—viz., partly due to irritation from the contiguous new growth, partly to the occlusion of the bronchus and pulmonary vessels, and perhaps, in part also, to pressure upon and injury of the pulmonary nerves. The appearances agree with those described in an interesting paper by Dr. Budd, in the "*Medico-Chirurgical Transactions for 1859*," in which illustrations are given of the effects of primary cancerous tumours of the lung in causing suppurative and destructive pneumonia. I made a microscopic examination of one of the nodules and of one of the glands from the root of the lung, and Mr. Hull, who assisted me, made a sketch [exhibited] from one of the microscopic slides. The new growths appear to be made up of heaps of tolerably uniform-sized round cells, about the size of lymph cells, in the meshes of the alveolar septa, which are highly pigmented. The character of the growth points to its being primary sarcoma of the lung, travelling along the vessels to the root of the lung.

The PRESIDENT.—I do not think there can be any doubt that the structure is a small round-celled sarcoma. I saw a similar case with complete occlusion of the pulmonary artery, the lower part of which was in a state of necrosis.—*March 26, 1881.*

Palpebral Sarcoma.—MR. STORY said: This is a tumour which I removed from the eyelid of a man aged fifty-one. He came to St. Mark's Ophthalmic Hospital last January twelve months. Five years previously both his eyes swelled up. After that they did not give him much trouble for a year, but at the end of that time he got a violent pain in the right eye. It lasted for six weeks, and subsequently the eye swelled up to a state in which it remained until I saw him, although the swelling was not at first so great as it was when he came to hospital. Beyond these circumstances, and the fact that he was in September, 1876, in hospital from the same disease, there was no history of the case. He was a tall, sallow, dark-haired man, unhealthy-looking as far as complexion went, but otherwise strong and able-bodied. The record of the diagnosis in the hospital book for 1876 was "hypertrophy of the conjunctiva." A portion of the conjunctiva was then cut away with a scissors, and he was sent away "cured" (?). He came back four years later. When he came in both his eyelids looked thickened and swollen,

but the left was not very noticeably so. The right eyelid projected to the size of half a billiard ball, being pressed forward by the tumour. There was no discoloration of the skin over the eyelid, and no enlarged blood-vessels. There was no glandular enlargement except in one gland in front of the right ear, which was hardly much enlarged. The skin was movable on the lids. On raising the lid, which could be done only by means of a retractor, we saw in the conjunctival space a large deep cavity filled with a red polypus-looking mass. It was with the greatest difficulty that we could see the cornea at all, but it was visible about an inch down, and was covered with a film of blood-vessels. The left eye was normal except that the conjunctiva was swollen and red, and that in the fornix conjunctivæ there were two or three reddish prominences which resembled polypoid growth of mucous membrane. With the assistance of Dr. Bennett this tumour was removed. The incision was made close to the margin of the lids, so as to include the hairs at the cilia and remove the whole of the tarsus, but to leave the skin of the lids intact. I made several microscopic sections of the tumour. Going from the conjunctival surface outwards the epithelial covering of the conjunctiva is hypertrophied, but intact. In most sections there is a distinct line of demarcation between the epithelium and the tumour proper, but in some of the preparations I observed no definite line of demarcation. Underneath the epithelium came a large mass of tissue consisting of very distinctly marked nuclei belonging to fragile round cells, and also fibrillated-looking hyaline tissue, which is stained very slightly by logwood, but has no definite structure. This portion of the tumour is thickly filled with blood-vessels with very thin walls. Farther outwards you get the tissue of the tarsus which is approximately normal. The meibomian glands are in a healthy state. Between them, in the fibrous tissue of the tarsus, there are numerous nuclei working either way, in and through the fibres. Outside the muscles of the eyelid are nearly normal. In one place I found these nucleated cells in the fibrous tissue surrounding the muscular bundles. Some of the arteries in this exterior portion of the tumour have their walls enormously thickened, and one of them, in addition to an enormously thickened wall, has a curious band of yellowish fibrous tissue encircling it at some distance from the vascular wall. Besides these appearances, Mr. Abraham states that he has seen giant cells in sections he has made.—*March 26, 1881.*

Fracture of the Upper Third of the Fibula from Indirect Violence.—**DR. BENNETT** said: Last year I published an account of ten specimens similar to this fracture, all being examples of fracture of the upper third of the fibula. My object was to establish that the upper third of the fibula is liable to fracture of an uniformly oblique character from indirect



violence. The violence which produces this injury is a wrench or twist of the ankle-joint. The fact that such a fracture could occur was pointed out by Maisonneuve in 1840. Since his time almost all writers on surgery have either expressed disbelief in the possibility of such a fracture, or denied its existence altogether. Malgaigne throws doubt on the existence of it. From time to time I had been collecting specimens from which I published the ten examples, and I came to the conclusion not only that this fracture can exist, but that it is a common injury. If one individual could collect such a number of specimens as I did—and all were collected by myself—the injury cannot be very rare. I also published a case in which I observed the phenomenon during life, the force applied being a wrench outwards of the ankle-joint, while the foot was extended. There is no visible injury of the ankle in the majority of cases where the fibula is broken in its upper third in this manner. The specimen now before you shows the injury extremely well, with complications which prove the force to have been applied at the ankle. The lower end of the inner malleolus is apt to be torn off, and as the injury is inflicted in an extended position of the ankle, the tibia may be broken along the posterior margin of its inferior articular surface. I have been fortunate enough, since I published the communication to which I have referred, to obtain within the last few days this specimen of the injury. The resemblance to the others is extremely close. It deviates from the typical form, however, in showing the existence of the injury of the ankle I have just described, while it exhibits the ankle complication in an extreme degree, but still of the same kind. We have the point of the inner malleolus separated downwards—depressed from its position as if torn off by a wrench, and at the same time the posterior part of the trochlea of the tibia is cracked off and displaced upwards. It affords an additional proof that these fractures follow a definite type, and that the injuries are comparatively common. But they are overlooked for two reasons. First, the site of the fibular fracture is very remote from the point at which the force is applied, and the fracture being oblique, does not cause such a material displacement of the parts as would attract the eye. Another reason why it is generally overlooked is the positive statement of authorities of the highest standing, such as Mr. Pirrie and others. He says that fracture of the upper third of the fibula, while the tibia remains uninjured, can only be the result of direct violence at the site of the fracture. A number of other writers have made the same statement—from what reason I know not.

MR. WHEELER.—I can state that I met two cases of such a fracture in living persons; and there are two specimens of it in the Museum of the College of Surgeons, to which my attention was directed by Dr. Bennett's paper when it came out. One of the living cases was under

my care in the City of Dublin Hospital. There was a good deal of swelling at the ankle-joint, and there was no difficulty in making out where the fracture was. The other case occurred to a well-known medical man. His fibula was fractured high up, and one or two surgeons of undoubted reputation said there was no fracture whatever. The day after the injury his ankle-joint was swollen. Mr. O'Grady and I agreed that there was a fracture of the fibula. These fractures of the fibula high up were produced by a twist of the ankle below.—*March 26, 1881.*

Fibrinous Exudation in an Abscess Cavity.—MR. ABRAHAM said: This small specimen I consider of sufficient interest to show to the Society, as I have not seen anything like it in any museum. It is a fibrinous exudation into the cavity of an abscess in a kidney. A section under the microscope shows the wall to consist of a more or less dense network of fibrils, in the meshes of which there are abundant pus-cells. There has been some exudation of blood from the walls of the abscess, and thus, no doubt, the fibrinous deposit was formed. I have sections of it on the table under the microscope, and also sections of the kidney, showing purulent collections in the immediate neighbourhood of the cyst. The specimen is from a case of Mr. Thornley Stoker, in which a large uterine myoma probably occasioned the kidney complication by interference with the urinary apparatus.—*March 26, 1881.*

Epithelioma.—MR. ABRAHAM said: This is a portion of a leg which was amputated by Mr. Porter at the Meath Hospital some months ago. The subject was a man thirty-three years of age. He had no family history of disease, but he had suffered from an ulcer in the front of the leg since he was seven years of age. It had consequently been growing for twenty-six years, had steadily increased in size, and at the time of the amputation it extended round the upper third of the leg for more than two-thirds of its circumference—the upper and lower margins of the gaping sore being some two inches distant from each other. Its depth was from one and a half to two inches, and the margin was hard and somewhat raised. All the tissues in the neighbourhood were greatly affected, and the bones were ulcerated through, with considerable loss of substance, as the specimen indicates. The muscles, skin, &c., were all much affected, especially below the seat of the ulcer, and the integuments everywhere were œdematous, and with a more or less brawny appearance. Fatty degeneration of the muscles was well marked, and the floor of the ulcer showed degeneration, with masses of gritty material and an accumulation of puriform fluid. That with such an extensive loss of continuity in almost all the tissues degeneration of the lower segment of the limb had not become more extensive was remarkable, and only to be

accounted for by the fact that the posterior tibial and peroneal arteries were intact, and that certain of the nerve trunks passed through the diseased tissue, with but little loss of function. The whole substance of the bones is evidently diseased, chiefly by a kind of expansive caries, but in the neighbourhood of the ulcer impregnation with the neoplastic growth is evident. The latter extends to the medullary cavity, where also accumulations of pus have taken place. The periosteum and the endosteum are everywhere thickened, and more or less gelatinous, and occasionally somewhat cartilaginous in consistence. As to the nature of the growth, I believe it to be epithelioma. A microscopic section shows infiltration of all the tissues, bone, marrow, &c., with collections of cells of an epithelial type. Whether it is to be considered an example of an ordinary ulcer taking on the character of carcinoma, or was a malignant growth from the commencement, I leave to discussion. There was an enlarged gland in the popliteal space, which, I think, contained epithelial cells.—*March 26, 1881.*

SALICYLATED STARCH IN ECZEMA.

KERSCH (*Wiener medicinisches Blatt*, No. 1, 1881) strongly recommends salicylated starch in the treatment of eczema. It is prepared by gradually mixing small quantities of pure starch with a 2 to 3 per cent. alcoholic solution of salicylic acid. When the starch has settled, the quantity of the solution present should be sufficient to furnish a layer over it. The residual solution should then be poured off, the salicylated starch pressed in stout muslin, and dried at a temperature of 176° F. The eczematous patches are first deprived of their scales by the use of a 2 per cent. solution of carbolic acid and potash soap; then dried with absorbent antiseptic cotton, subsequently moistened with a 2 per cent. alcoholic solution of salicylic acid, and then thickly covered with the salicylated starch. The remedy, even allowing for Kersch's enthusiasm, seems to have acted well, and is worthy of more extended trial.—*Chicago Medical Review.*

ICE IN CROUP.

DR. BLEYNIE, Professor in the Limoges School of Medicine, has collected opinions from his medical *confrères* who have been led by him to rely chiefly upon ice in the treatment of croup. With them all the proportion of recoveries has been most satisfactory. His plan is to place a small piece of ice every ten minutes in the patient's mouth, and to continue doing so during sleep as well as when the child is awake, until the false membrane is detached. Even then the ice should be given, but at longer intervals, from every half hour up to every two hours, till recovery is assured.—*Revue Médicale.*

S. W.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday,
October 8, 1881.*

Towns	Population in 1881 (Unre- vised)	Births Registered	DEATHS REGISTERED			DEATHS FROM ZYMOTIC DISEASES							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin, -	348,525	783	544	119	146	-	2	7	1	-	15	15	59	20·3
Belfast, -	207,671	527	293	83	41	1	-	1	1	2	6	22	49	18·4
Cork, -	78,361	176	156	19	40	-	1	5	-	1	9	16	24	25·9
Limerick, -	38,600	75	56	11	11	-	1	6	-	-	1	4	6	18·9
Derry, -	28,947	66	52	5	12	-	-	1	-	-	4	1	5	23·4
Waterford,	22,401	64	34	4	9	1	-	-	-	-	4	3	-	19·7
Newry, -	14,782	32	14	3	1	-	-	3	-	-	-	-	5	12·3
Galway, -	14,621	29	19	1	10	-	-	1	-	-	3	-	1	16·9

Remarks.

In Cork and Londonderry the death-rate was rather high; in the other towns it was moderate or low. It was 18·1 per 1,000 of the population annually in twenty large English towns, having an aggregate population of 7,608,775 persons, and including London with a population of 3,829,751 persons, in which it was 17·0 per 1,000. The mortality was at the rate of 17·5 per 1,000 annually in Edinburgh, 20·1 in Glasgow, and 19·6 in the sixteen principal town districts of Ireland. Omitting the deaths (18) of persons admitted into public institutions from localities outside the district, the deaths registered in the Dublin registration district represent an annual death-rate of 19·6, while those registered within the municipal boundary represent one of 22·1 per 1,000. In Dublin only 57 deaths were referred to zymotic diseases, against an average of 167·9 in the corresponding period of the preceding ten years. Thus the mortality from this class of affections was little more than one-third of the average. Fever and diarrhoea each caused 15 deaths, and scarlatina 7 deaths. Of the 15 fatal cases of "fever," 4 were ascribed to typhus, 8 to typhoid, and 3 to so-called "simple con-

tinued fever." Diarrhœa was again prevalent and fatal in Belfast and Cork, while both scarlet fever and fever were widely diffused through the towns. Phthisis was once more fatal in Dublin, Belfast, and Cork—in the capital 10·8 per cent. of all the deaths were referred to this disease. The deaths from diseases of the respiratory organs numbered 93 in Dublin, the average in the previous ten years being only 68·7. They included 72 from bronchitis (average = 48·6) and 16 from pneumonia (average = 10·8).

The change in the seasonal prevalence and fatality of disease is well shown by the weekly numbers of deaths in London from diarrhœa and respiratory affections respectively—the deaths from diarrhœa in the four weeks were 40, 33, 34, and 38; those from diseases of the organs of respiration were 156, 164, 186, and 227.

At the close of the period the number of cases of the chief epidemic affections under treatment in the principal Dublin hospitals was as follows—smallpox, 0; measles, 0; scarlet fever, 39; typhus, 66; typhoid, 16; and pneumonia, 11.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.
for the Month of September, 1881.*

Mean Height of Barometer,	-	-	-	29·991 inches.
Maximal Height of Barometer (on 1st at 9 a.m.),	-	-	-	30·406 „
Minimal Height of Barometer (on 21st at 9 a.m.),	-	-	-	29·238 „
Mean Dry-bulb Temperature,	-	-	-	54·6°.
Mean Wet-bulb Temperature,	-	-	-	52·7°.
Mean Dew-point Temperature,	-	-	-	50·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·373 inch.
Mean Humidity,	-	-	-	87·6 per cent.
Highest Temperature in Shade (on 24th),	-	-	-	63·7°.
Lowest Temperature in Shade (on 1st),	-	-	-	41·2°.
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	-	37·9°.
Mean Amount of Cloud,	-	-	-	68·5 per cent.
Rainfall (on 12 days),	-	-	-	1·599 inches.
Greatest Daily Rainfall (on 20th),	-	-	-	·558 inch.
General Directions of Wind,	-	-	-	W. and N.N.E.

Remarks.

A cool, generally fine month, the mean temperature slightly below and the rainfall and rainy days decidedly below the average of previous years. At the beginning an anticyclone was found over the northern portion of the British Islands, so that N. and N.E. winds and dry but cloudy weather were prevalent. On the 5th two depressions approached the south of England—one from the Baltic, the other from the Atlantic.

In consequence the weather became less settled, and fresh or strong easterly winds prevailed. On the 8th the atmosphere was so clear before sunset that the Welsh mountains were visible from the coast at Bray, Co. Wicklow. Next day heavy showers fell in the forenoon, and distant thunder was heard later in the day. Conditions now became anticyclonic again. The weather was chiefly cloudy or hazy, with light, variable airs, principally from the northward. On the 17th there was a considerable rainfall, followed by electrical disturbances in England on the 18th, when the thermometer rose to 74° or 75° at many inland stations in that country. A period of changeable, unsettled weather ensued; but after the 27th an anticyclone—the third observed during the month—lay over England, where cold, damp nights were succeeded by foggy mornings and fine autumnal days. In Ireland mild, cloudy weather and southerly winds prevailed, and there was a fall of rain on the 29th. In Dublin the atmosphere was foggy on the 1st, 2nd, 17th, and 23rd. Thunder was heard on the 9th; lightning was seen on the 17th. There was a partial solar halo on the forenoon of the 16th. A brilliant rainbow was visible to the S.E. of Dublin on the afternoon of the 19th. On the night of the 13th a strikingly beautiful display of aurora borealis was seen from many Irish, Scotch, and Scandinavian stations, and “earth currents” were reported from Roche’s Point and Aberdeen.

IODIDE OF ETHYL IN ASTHMA.

DR. LAWRENCE, who, in former papers (*Boston Med. and Surg. Jour.*, April 29, 1880, and *N. Y. Med. Record*, June 19, 1880) presented the results of a careful study of the physiological and therapeutic effects of the iodide of ethyl, and also attempted to explain the several modes of action of the drug when inhaled for the relief of the different forms of dyspnœa, reports, in the *N. Y. Med. Journal*, three case of bronchitic asthma successfully treated by inhalations of the vapour of the iodide of ethyl. Its speedy absorption into the blood, its antispasmodic quality and prompt reflex stimulation of the respiratory muscles, may reasonably account for its beneficial action in the asthmatic paroxysm, while its power of liquefying and detaching accumulations of mucus sufficiently explains its curative influence in chronic bronchitis. Further experience has confirmed Dr. Lawrence’s faith in its remedial worth in a large majority of cases of laboured respiration (whether due to bronchial spasm or to increased mucous secretion) and also in certain obstinate cases of dyspnœa, not due to organic pulmonary or cardiac lesions, where other remedies may have proved inefficient. In a small minority of cases it has failed to afford relief. Dr. Lawrence does not wish to be understood as recommending this drug as a substitute for internal medication, but rather as an adjunct thereto.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

JABORANDI IN CHRONIC ARSENICAL POISONING.

IN experimenting upon the action of arsenic on the glycogenic function of the liver, Prof. Zupara has convinced himself that the salivary glands excrete arsenic as energetically as the kidneys or the liver, and that when the latter organs are incapacitated the glands can supplement their work. He, therefore, suggests that in cases where arsenic, given medicinally for a long period, had accumulated prejudicially in the system, or where it had been insidiously acting as a poison, as in wall paper, the administration of jaborandi would be a ready way to its elimination.—*Revue Médicale.* S. W.

THE USE OF QUEBRACHO IN DYSPNŒA.

DR. ANDREW H. SMITH, chairman of the Committee on Restoratives of the Therapeutical Society of New York, has submitted on behalf of the committee a report, founded on clinical data, on the use of quebracho in dyspnœa, which is published in the *New York Medical Journal and Obstetrical Review* for September, 1881. Of the thirty-two cases covered by the report, eleven were of spasmodic asthma, with or without emphysema and bronchitis. Of these, in nine cases the dyspnœa was notably relieved. In two cases of asthma associated with bronchitis no benefit resulted. One patient with emphysema and bronchitis without asthma was relieved. One with bronchitis with obesity was not relieved. Two with mitral insufficiency were not relieved. One with mitral stenosis was not relieved. One with hypertrophy with dilatation was not relieved. In two cases of cardiac disease (form not stated) the dyspnœa was relieved. In one case of fatty heart there was slight relief. Two patients with dyspnœa depending upon Bright's disease, in one of whom pulmonary œdema was noted, were relieved. In one case of aortic aneurism the dyspnœa was relieved till near the close. In one case of tonsillitis the dyspnœa, partly nervous, was relieved. In one case of cancer of the lung dyspnœa was relieved. In two cases of pneumonia it was relieved. One patient with hysterical dyspnœa was relieved. In one case of catarrhal phthisis, second stage, the dyspnœa was relieved. In one case of catarrhal phthisis, third stage, it was not relieved. In one case of intermittent fever with old pleurisy, the patient being an opium-eater, the dyspnœa was increased. Thus, of the thirty-two cases of

different diseases in which dyspnœa formed a prominent feature, this symptom was relieved to a greater or less extent in twenty-one; not relieved in ten; aggravated in one. In some instances the treatment was not pushed far enough to give a decisive result. It is possible that the nausea observed in some cases might have been avoided by the use of smaller doses, and perhaps a favourable result obtained. The fact that dyspnœa depending upon such a variety of causes may be relieved by quebracho points, says the writer, to the respiratory centre as the seat of its action. Apparently it blunts the sense of want of air, and thus mitigates the suffering from a deficient supply. But this action is not necessarily only palliative. Exaggerated respiratory efforts are often in themselves an evil, not only on account of the muscular effort expended, but from the aspiration of blood into the thoracic viscera, which results especially when the dyspnœa is caused by narrowing of the air-passages rather than by solidification or compression of the lung. Hence in many cases an agent which will moderate the violence of the respiratory movements will not only lessen the distress of the sufferer, but will increase the chances of his recovery. That quebracho will often very promptly fulfil this indication there seems to be no room to doubt, while as yet there is no evidence that it is liable to produce unfavourable after-effects. The extremely disagreeable taste of the medicine and its tendency to produce nausea are, however, serious drawbacks to its use by the mouth. As yet we have no record of its employment by the rectum. If the active principle is isolated, so that it can be used hypodermically, a great advantage will have been obtained.

THE CEPHALIC SOUFFLE.

M. R. TRIPIER, Physician to the Hospital of Lyons, has published some new researches on this subject. He believes that in certain cases a deep systolic souffle can be heard all over the cranium, but principally at the sides on a level with the temples, and with a maximal intensity over the right temporal region. It can be modified or momentarily suppressed by compression of the carotid of the auscultated side, or even of the opposite. The patients with whom it is observed themselves hear the intermittent bruit. It is most probably produced at the terminal part of the internal carotid artery, where it enters the cranium. It is most frequently met with in cases of anæmia produced by hæmorrhage or cachexia, and in chlorosis; and where it is heard without any bruit at the base of the heart, and especially where it is heard without anæmia, there should be a suspicion of pressure from intra-cranial tumour.—*Revue Médicale.*

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DECEMBER 1, 1881.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XIII.—*Tripier's Amputation of the Foot.* By P. J. HAYES, F.R.C.S.E.; Surgeon to the Mater Misericordiæ Hospital; Lecturer upon Surgery in the Catholic University School of Medicine; and Consulting Surgeon to St. Michael's Hospital, Kingstown.^a

IN *The British Medical Journal* for February 26, 1881, will be found a brief report of the first case in which the amputation devised by Professor Tripier, of Lyons, was performed upon the living subject. Since the publication of my report Professor Tripier has been in communication with me, and I have to thank him for an admirable essay upon Chopart's operation, written by his pupil, Dr. Duchamp, in which is contained the original description of his improvement upon the method of Chopart.

Through the kindness of Dr. Peyton, medical officer for the district of Gurteen, county Sligo, I have been enabled to ascertain that the stump of my former patient is now, after the lapse of eighteen months, in a highly satisfactory condition; and encouraged by this success I performed the operation of Professor Tripier upon a second patient, for whom amputation through the foot was required. As an introduction to the report of my cases, and with a view to elucidate the arguments which I desire to advance in favour of the procedure proposed by Professor Tripier, I append

^a Part of this communication formed the substance of a paper read at a meeting of the Biological Club, May 3rd, 1881.

the following short historical review of Chopart's amputation, an abstract from the essay of Dr. Duchamp:—

Ninety years ago Chopart, for the first time, performed that disarticulation through the median tarsal articulation which has rendered his name so well known in surgical circles. This procedure was a complete innovation, as the practice previously had been in every case where injury or disease implicated the anterior part of the foot to sacrifice the greater portion of the leg, and amputate at the "*lieu d'élection*."

The new amputation was at first received with approval by the majority of surgeons, but after the elapse of a few years practitioners began to observe that sooner or later many healed stumps were apt to assume most unsatisfactory conditions. Thus eversion or valgus of the remains of the foot was of frequent occurrence, whilst the heel became drawn or displaced backwards and upwards, so as to effect marked depression of the anterior face of the stump. The depressed part being composed of cicatrix tissue, and unsuited to bear pressure, was, of course, liable to undergo ulceration or at least to become so sensitive as to render walking impossible, and consequently re-amputation was not seldom required.

Alternating successes and failures caused Chopart's amputation to be made, time after time, the subject of discussion at the Société de Chirurgie in Paris, until, in 1860, the majority of members, led by Bouvier, having pronounced an opinion adverse to the procedure, it ceased to be favoured in France.

But whilst the greater number of French surgeons abandoned this operation, some eminent Germans practised and praised it. At the present time, indeed, it is much lauded by R. Volkmann and Max Schede.

It will not be out of place here to enumerate the various explanations which have been proposed as accounting for the objectionable equinisation which so frequently appeared after Chopart's amputation. At first it was believed that the muscles of the calf acted injuriously through the tendo Achillis upon the remains of the foot, and many operators, following the practice of Petit, divided that tendon. Tenotomy, combined with attention to the position of the stump, seems to have afforded satisfactory results in a few cases; but continued experience proved that in the majority of instances deformity depended upon other conditions than traction exerted upon the heel through the tendo Achillis. Bouvier, finding tenotomy powerless to prevent undue extension of the

ankle, concluded that the divided tendons of the deep muscles upon the back of the leg became attached to the os calcis, and by their subsequent contraction produced the objectionable deformity.

It is now, I may say, recognised that retraction of the heel (together with valgus of the foot—remains) does not either often or in chief measure depend upon muscular contraction. Malgaigne, Sédillot, and Legouest, having given consideration to the static conditions of the foot, arrived at the conclusion that the state of equino-valgus occurring after Chopart's amputation must be the result of mechanical pressure.

If we examine the skeleton of a normal foot we observe it to be so arched, where the weight of the body is transmitted to it through the tibia, that only the extremities of this arch—viz., the convex posterior part of the os calcis behind and the first and fifth metatarsal bones in front—come into contact with the ground; also we notice the inner part of the os calcis to be deeply excavated beneath the sustentaculum tali. Now, if the anterior part of the plantar arch be removed from the living subject, and the patient then be permitted to throw his weight upon the stump, there must occur—as Boeckel and Gross have pointed out—a slight backward tilting of the os calcis, attended with some depression of the anterior part of the astragalus. The weight of the body, now acting through the tibia upon the posterior surface of the astragalus, tends to push that bone downwards and forwards, and if yielding of the ligaments of the ankle takes place, complete depression of the anterior extremity of the stump must ensue. Moreover, as the outer part of the os calcis descends considerably below the level of the sustentaculum tali, when the stump is subjected to the antagonistic forces—the pressure from above and the resistance of the ground—outward twisting or valgus of the remains of the foot will be very likely to occur. It need hardly be stated that where disease of the tarsus or of the metatarsus has existed for some time, the foot will have been maintained in a more or less extended position, and the ligaments of the ankle will have become weak and elongated. Consequently, if Chopart's amputation be performed, deformity must become notable when the patient attempts to walk.

The dissections of Verneuil and others supply evidence to prove that the distortion just described frequently gives rise to chronic inflammation in the fibrous textures behind the ankle. This process results in the formation of adventitious bands binding the

upper and posterior part of the os calcis to the posterior surface of the tibia, and these bands undergoing condensation and contraction serve to exaggerate that extension of the ankle which led to their development.

Nor are these the only evils likely to spring from deformity of the ankle and strain of its ligaments.

Of course when the cicatrix of the amputation wound becomes subject to pressure, ulceration will in all probability ensue, but besides mischief affecting the soft parts, manifestations of disease attacking the os calcis are only too apt to appear and imperatively call for the performance of some secondary amputation.

With regard to this recurrence or, it may be, new development of caries, the explanation offered by Volkmann and Schede is that at the time of disarticulation, although the surface of the os calcis may seem to be in quite a healthy condition, yet it is very possible there may be an area of disease concealed within the bone near its centre. Under such circumstances it will require time for the osseous disease to approach the surface, produce suppuration, and reveal its presence.

Tripier and Duchamp add, as their opinion, that disease may be induced in previously healthy bones by an undue strain being maintained upon their ligamentous connexions. Now, if this latter view be well founded, we can readily comprehend why caries of the os calcis should frequently prove a source of trouble and disappointment after the performance of Chopart's operation, as a constant strain upon the ligaments connecting the os calcis with the astragalus, and the latter with the bones of the leg, must be associated with the condition of equino-valgus already described.

I have made allusion to the satisfactory results of Chopart's amputation in the experience of Volkmann and Schede. The success of these surgeons appears to be due to the fact that they carefully select their cases for operation; they strictly attend to the maintenance of good position during the period of healing, and when the stump is strong enough to permit an attempt at walking being made, the patient is provided with a boot, the short sole of which is constructed thick in front and thin behind, this peculiar arrangement being calculated to ensure support for the anterior part of the os calcis, and prevent extension of the remains of the foot.

Twenty-six years ago Chassaignac declared that, in his opinion, Chopart's operation deserved to be not condemned, but rendered

perfect; and within the past two years Professor Tripier has proposed an operation calculated to overcome all the defects associated with the method of Chopart. I have, as has been stated, tested the operation of Professor Tripier upon two occasions, and I fully believe this operation deserves to occupy a high position amongst the many valuable achievements of the French school of surgery.

The published report of my first case includes a short description of the mode of performing Tripier's amputation. I venture, however, to repeat the details of the procedure upon the present occasion, as they probably are not known to the majority of operators in this country. The surgeon's knife is caused to take the following course:—Commencing at the outer edge of the tendo Achillis, on a level with the external malleolus, a skin wound is to be made in a direction at first downwards and forwards, and afterwards forward, so as to pass two finger-breadths below the malleolus, and then to approach, by a finger's-breadth, the upper part of the base of the fifth metatarsal bone. From this point the incision is to be carried upwards, forwards, and inwards, so as to reach the inner margin of the tendon of the extensor hallucis proprius, just behind the first tarso-metatarsal articulation. The knife should now be made to cut downwards and forwards, so as to enter the sole of the foot a finger's-breadth in front of the dorsal wound. The incision is then to be carried, with a gentle forward curve, outwards and backwards, until it can be made continuous with the first portion of the wound below the outer malleolus. The divided integument having undergone some degree of retraction, the dorsal and plantar structures are to be divided half an inch behind the superficial wound; the soft parts are then to be separated from the bones, extreme care being taken to preserve uninjured the vessels contained in the inner part of the plantar flap. The surgeon will find it convenient at this stage to disarticulate the cuboid and scaphoid from the os calcis and astragalus, just as in Chopart's amputation. Having done so, he will proceed to divide and separate the periosteum from the under-surface and posterior extremity of the os calcis up to the level of the sustentaculum tali, where the bone is to be sawn through in a direction from behind and within, forwards and outwards, so as to leave a surface which will be at right angles with the axis of the tibia when the limb is caused to assume the ordinary position for walking or standing. All sharp bone edges and angles should now be rounded off. The posterior tibial nerve is to be exposed in the

plantar flap, and divided as high as possible, with a view to prevent risk of neuroma. The vessels having been secured, and drainage-tubes having been inserted, the flaps are to be brought together, and the limbs so dressed as to secure moderate flexion of the ankle-joint during the period of repair. The chief advantages which belong to the procedure of Professor Tripier are:—

1. That comparatively short flaps will be found quite sufficient to afford complete covering for the bone surfaces.

2. The tendons will have been divided well in front of their sheath-connexions with the astragalus and os calcis, so that when they form new attachments the muscles which act upon them will be capable of regulating flexion and extension of the ankle-joint.

3. Section of the os calcis will at once prove whether the bone is throughout healthy, and in the event of there being any evidence of central disease the operation can very readily be converted into a disarticulation at the ankle.

4. Removal of the lower part of the os calcis in the manner described leaves an extremely broad even surface which at once secures the patient against risk of subsequent distortion, and causes pressure to be diffused over such a considerable extent of soft tissue as to render the chance of ulceration well-nigh impossible. Besides other advantages attendant upon this operation, the wound heals rapidly, and within a very short space of time the limb becomes capable of sustaining the entire weight of the body.

Professor Tripier attaches importance to the preservation of the periosteum covering the under-surface of the os calcis when it is possible to do so, and he presented me with an instrument which he has had constructed for the purpose of dividing and separating periosteum during operations upon bones. This instrument is known under the name of "Couteau-rugine." The beak serves to incise periosteum, the straight margin to detach the membrane from even surfaces, whilst the convex extremity and concave edge will be found suitable—the one for bony grooves, and the other for ridges or crests.^a I have very few observations to make respecting the two cases treated by the method of Tripier.

CASE I.—A report of this patient having been published in the *British Medical Journal*, I merely append the supplemental information which I have received from Dr. Peyton.

^a Messrs. Fannin & Co. can supply models of the Couteau-rugine.

The patient, after leaving hospital, never suffered in any way from the stump, save that the cicatrix at the outer edge of the tendo Achillis was for a time the seat of slight superficial ulceration, which completely healed under applications of carbolic oil. The woman can place the stump firmly upon the ground; she has perfect command over the movements of the ankle-joint, flexion being performed rather better than extension; and no act of extension, however exaggerated, could cause the anterior part of the cicatrix to be brought into contact with the ground.^a

CASE II.—J. E., aged forty, was admitted to hospital eight months ago, suffering from chronic caries and necrosis of the bones in his left foot, induced by severe injury. Mr. Kennedy removed sequestra on two or three occasions, and when I resumed hospital attendance I cleared from the foot every trace of dead and carious bone. However, the patient remained in an unsatisfactory condition, as the soft parts were in a very unhealthy state, and patches of chronic ulceration existed over the outer side and plantar aspect of the foot. Ultimately it became evident that the deformed and ulcerated foot would be a continual source of distress to the man. At the same time I observed his general health was beginning to fail. Consequently, with his hearty consent, on May 3rd, I removed the anterior part of his foot.

The performance of Tripiér's operation in this case was rendered difficult—in the first place, owing to the rigid, inelastic condition of the soft structures; and, secondly, on account of the extremely hard and otherwise altered state of the bones. Chronic osteitis of long duration had caused all the tarsal bones to become fused together, so that to disarticulate at Chopart's line was a matter of impossibility. The saw had to be employed for the purpose of removing the bony mass in front of the astragalus and calcaneum, as well as for section of the latter bone, and the tissue offered considerable resistance to the action of the instrument.

The man was able to get up on the tenth day after the operation, and three days later could trust his weight upon the stump.

Freedom from pain, or even tenderness, rendered him rather incautious, as he walked about with no better protection for the stump than was afforded by a few turns of a roller. I was therefore not surprised when he came to me some time later, suffering from a small abscess situated over the anterior surface of the tibia, which opened through the cicatrix of the amputation

^a Since the above was written I received from Dr. Peyton news of the patient's death. She died, during September in the present year, of thoracic cancer.

wound. Rest and elevation of the limb relieved him from all unpleasant symptoms, and he can now walk with perfect comfort and security.

I wish to explain a peculiarity which cannot fail to attract notice when we examine the stump, pictured in the annexed illustration. The patient seems to have suffered from retraction of the heel, or to be "lark-heeled." The reason of this is that when separation of the periosteum—together with all the lower fibres of insertion of the tendo Achillis—from the posterior part of the os calcis is effected, and the inferior part of that bone removed, a kind of loose fibrous cap is left over the remains of the bony process. Here, of course, effusion of plastic matter must take place, adding, perhaps, a little to the length of the heel, but without producing any worse result than giving rise to an erroneous idea of retraction.

ART. XIV.—*Medical Report of the Kilmainham Fever Hospital, from the date of its establishment, 1st February, 1879, to 30th June, 1881.* By LESLIE MATURIN, L.K.Q.C.P.I., Physician to the Hospital.

THIS hospital, in connexion with the South Dublin Union, was superadded on the above date to the Kilmainham Smallpox Hospital, opened in 1871 to meet the requirements of the smallpox epidemic which existed at that time. It was closed in 1872, and reopened on the 10th of April, 1878. From the date of its establishment to September, 1880, when the last case of smallpox was admitted, 1,585 cases of acute smallpox and 955 convalescents from other hospitals were admitted. In the beginning of 1879, measles and scarlatina being very prevalent, the Board of Guardians established the Fever Hospital for the purpose of isolating infectious cases occurring in the union hospitals and in the dispensary districts comprised in the union—viz., that portion of the city lying on the south side of the river, and the rural dispensary districts of Rathfarnham, Whitechurch, Tallaght, Rathmines, Donnybrook, Palmerstown, and Clondalkin. Both the Smallpox and Fever Hospitals occupy the same enclosure, but are situated at different parts of it, and are completely isolated from each other. They are temporary one-storied erections of wood, constructed upon the cottage system; the wards occupy the whole

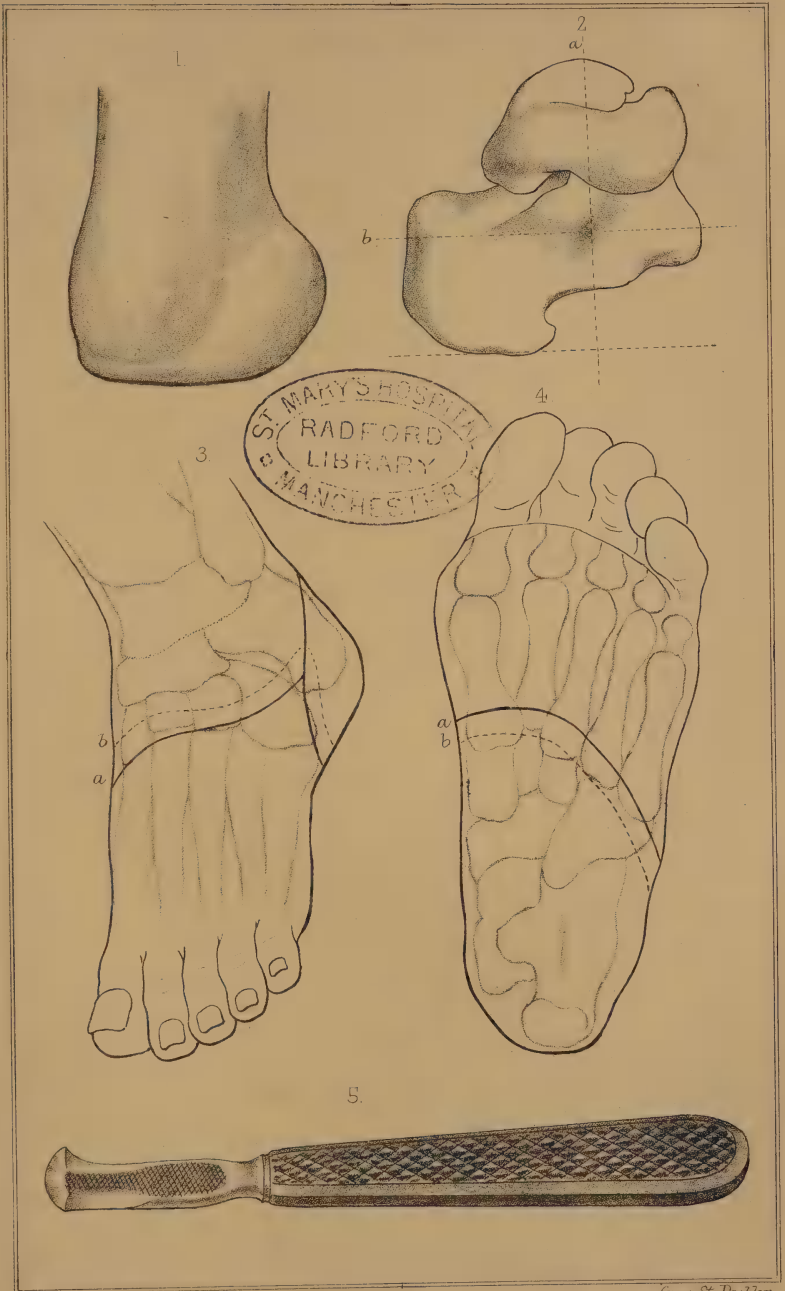


Fig. 1.—Appearance of stump after performance of Tripier's amputation.

Fig. 2.—Astragalus and os calcis.—*a* corresponds with the axis of the tibia, through which the weight of the body is transmitted.—*b* corresponds to the sawn surface of the os calcis, which, after the performance of Tripier's amputation, forms the basis of support.

Figs. 3 and 4 serve to illustrate the lines of incision through the skin (*a*) and subcutaneous tissues (*b*).

Fig. 5.—Professor Tripier's "Couteau-rugine" for effecting division and separation of periosteum.

breadth of the cottage, and each ward is capable of containing from ten to twenty beds. No medical report has hitherto been published of either hospital. I am at present engaged in tabulating the statistics of the Smallpox Hospital, which I hope to publish at a future date, but as the registers furnish very scanty data it is a work of no small labour, the information being chiefly derived from private notes in the possession of the late medical officer, Dr. E. H. Byrne.

Within the above period 904 cases were admitted into hospital, viz. :—

From 1st February to 31st December, 1879,	215
From 1st January to 31st December, 1880,	396
From 1st January, to 30th June, 1881,	293
Total,	904

This number is composed as follows :—

Typhus fever,	323
Enteric fever,	37
Simple fever,	171
Scarlatina,	84
Measles,	162
Varicella,	29
Pneumonia,	93
Whooping-cough,	2
Diphtheria,	1
Hydrocephalus,	1
Tetanus,	1
Total,	904

But one case of enteric fever was admitted during the six months to 30th June, 1881, the proportion to typhus being only 1 in 212, as against 1 in 5·13 in 1880, and 1 in 1·31 in 1879. The disproportion is of course partly accounted for by the large number of typhus cases in 1881, but the isolated case is *per se* striking. The large increase of typhus cases following upon the very cold weather of November, 1880, 24 to 2 the previous month, and its increase and perpetuation during the following seven months, furnishes strong evidence in favour of its mode of origin and propagation. The largest number of typhus cases (52) were admitted in the month of Jan., 1881, as against 30 the previous month, and

against 2 and 0 of the corresponding months of the two previous years respectively. The total number of typhus cases (323) represents about $35\frac{2}{3}$ per cent., or about 1 in 3 of all the cases treated within the entire time. The total number of cases of simple continued fever (171, or nearly 19 per cent. of the entire admissions) is also very large.

During the year 1880 measles was largely in excess of the previous year, the admissions being 123 (of which 72 were admitted in June), against 30 (25 of which were admitted in February, 1879). For the six months to 30th June, 1881, only 9 cases have been admitted. Twenty-three cases of pneumonia were admitted from 1st February to 31st December, 1879, 46 in the year 1880, and 24 for six months to 30th June, 1881. Of 84 cases of scarlatina 33 occurred in 1879, 46 in 1880, and only 5 for six months to 30th June, 1881.

TABLE I.—*Showing the Total Number of Cases of each Disease admitted during each Month, from 1st February to 31st December, 1879.*

Date	Typhus Fever	Enteric Fever	Simple Fever	Scarlatina	Measles	Varicella	Pneumonia	Hydrocephalus	Tetanus	Total for each Month
1879										
February, . . .	3	2	2	13	25	—	3	—	—	48
March, . . .	10	2	3	5	1	—	2	—	—	23
April, . . .	12	5	2	—	—	—	1	—	1	21
May, . . .	2	1	7	5	—	—	—	—	—	15
June, . . .	1	6	4	1	1	—	—	—	—	13
July, . . .	—	—	1	—	—	—	3	—	—	4
August, . . .	—	—	1	2	—	—	—	—	—	3
September, . .	2	4	13	—	—	—	3	—	—	22
October, . . .	2	1	9	1	—	11	—	—	—	24
November, . .	7	—	3	1	—	4	8	1	—	24
December, . .	—	1	2	5	3	4	3	—	—	18
Total for eleven Months, }	39	22	47	33	30	19	23	1	1	215

TABLE II.—*Showing the Total Number of Cases of each Disease admitted during each Month, from 1st January to 31st December, 1880.*

Date	Typhus Fever	Enteric Fever	Simple Fever	Scarlatina	Measles	Varicella	Pneumonia	Whooping-cough	Total for each Month
1880									
January, . .	2	1	9	3	3	—	3	—	21
February, . .	5	—	5	1	1	—	4	—	16
March, . .	2	1	3	2	—	—	3	—	11
April, . .	—	4	1	4	2	—	2	—	13
May, . .	—	—	9	4	13	—	7	—	33
June, . .	2	—	6	4	72	2	6	—	92
July, . .	2	—	5	5	3	—	1	—	16
August, . .	1	1	9	4	—	1	1	—	17
September, .	2	2	10	1	11	1	5	—	32
October, . .	2	1	7	5	14	1	3	—	33
November, .	24	2	14	5	3	—	5	2	55
December, .	30	2	10	8	1	—	6	—	57
Total for year,	72	14	88	46	123	5	46	2	396

TABLE III.—*Showing the Total Number of Cases of each Disease admitted during each Month, from 1st January to 30th June, 1881.*

Date	Typhus Fever	Enteric Fever	Simple Fever	Scarlatina	Measles	Varicella	Pneumonia	Diphtheria	Total for each Month
1881									
January, . .	52	—	11	—	—	2	2	—	67
February, . .	22	—	8	4	—	—	4	—	38
March, . .	36	1	7	—	6	3	5	1	59
April, . .	36	—	2	—	1	—	6	—	45
May, . .	41	—	2	—	1	—	4	—	48
June, . .	25	—	6	1	1	—	3	—	36
Total for six months, }	212	1	36	5	9	5	24	1	293

TABLE IV.—*Showing the Ages at which the Total Number of Diseases occurred, from 1st February, 1879, to 30th June, 1881.*

Total Number of Cases	Under 5 Years	Above 5 and under 20 Years	Above 20 and under 40 Years	Above 40 and under 60 Years	Above 60 Years
904	208	384	230	64	18

By this table it will be seen that in a total of 904 cases 208, or 23 per cent., occurred under 5 years; 384, or $42\frac{1}{2}$ per cent., above 5 and under 20 years; 230, or $25\frac{1}{2}$ per cent., above 20 and under 40 years; 64, or 7 per cent., above 40 and under 60 years; and 18, or 2 per cent., above 60 years of age.

TABLE V.—*Showing the Ages at which the different Diseases occurred, from 1st February to 31st December, 1879.*

Diseases	Total Number of Cases	Under 5 Years of Age	Above 5 and under 20 Years	Above 20 and under 40 Years	Above 40 and under 60 Years	Over 60 Years
Typhus Fever, . .	39	7	16	14	2	—
Enteric Fever, . .	22	1	11	9	1	—
Simple Fever, . .	47	9	18	16	4	—
Scarlatina, . . .	33	18	11	3	1	—
Measles,	30	28	2	—	—	—
Varicella,	19	9	10	—	—	—
Pneumonia, . . .	23	4	7	8	2	2
Hydrocephalus, . .	1	1	—	—	—	—
Tetanus,	1	—	1	—	—	—
Total,	215	77	76	50	10	2

TABLE VI.—*Showing the Ages at which the different Diseases occurred, from 1st January to 31st December, 1880.*

Diseases	Total Number of Cases	Under 5 Years of Age	Above 5 and under 20 Years	Above 20 and under 40 Years	Above 40 and under 60 Years	Over 60 Years
Typhus Fever, . .	72	—	35	29	6	2
Enteric Fever, . .	14	2	7	5	—	—
Simple Fever, . .	88	13	32	27	11	5
Scarlatina, . . .	46	8	32	6	—	—
Measles,	123	75	48	—	—	—
Varicella,	5	3	2	—	—	—
Pneumonia, . . .	46	5	12	15	12	2
Whooping-cough, . .	2	2	—	—	—	—
Total,	396	108	168	82	29	9

TABLE VII.—*Showing the Ages at which the different Diseases occurred, from 1st January to 30th June, 1881.*

Diseases	Total Number of Cases	Under 5 Years of Age	Above 5 and under 20 Years	Above 20 and under 40 Years	Above 40 and under 60 Years	Over 60 Years
Typhus Fever, . .	212	8	114	70	16	4
Enteric Fever, . .	1	—	1	—	—	—
Simple Fever, . .	36	2	13	15	5	1
Scarlatina, . . .	5	1	3	1	—	—
Measles,	9	8	1	—	—	—
Varicella,	5	2	3	—	—	—
Pneumonia, . . .	24	1	5	12	4	2
Diphtheria, . . .	1	1	—	—	—	—
Total,	293	23	140	98	25	7

During the three periods the greatest number of cases of typhus occurred between 5 and 20 years—viz., 165 out of a total of 323, or about 51 per cent. ; 113 cases, or 35 per cent., occurred between 20 and 40 years. But 6 cases occurred above 60 years, and 15

under 5 years of age. Out of a total of 37 cases of enteric fever, 3, or 1 in 12, occurred under 5 years of age; 19, or about one-half, were under the age of 20; and 14, or nearly one-third, between the ages of 20 and 40 years. The greatest number of cases of simple continued fever (63 out of 171, or nearly 1 in 3) were between 5 and 20 years of age. In 84 cases of scarlatina, 27, or one-third, occurred under the age of 5 years; and 46, or nearly one-half, between 5 and 20 years of age. All the cases of varicella (29 in number) were under 20 years of age. Ninety-three cases of pneumonia were treated during the entire period. Of these 10, or 1 in 9, occurred under 5 years; 24, or nearly 1 in 4, between 5 and 20 years; 35, or about 1 in $2\frac{3}{5}$, between 20 and 40 years; 18, or about 1 in 5, between 40 and 60 years; and 6, or about 1 in 15, above 60 years of age. One case of idiopathic tetanus occurred in a boy 16 years of age, one of hydrocephalus, one of diphtheria, and 2 of whooping-cough, in children under 5 years of age.

TABLE VIII.—*Showing the Total Mortality from each Disease, from 1st February, 1879, to 30th June, 1881.*

Diseases	Total Number of Cases	Total Number of Deaths	Mortality per Cent.
Typhus Fever, . .	323	54	16·71 per cent., or 1 in 6
Enteric Fever, . .	37	3	8·10 per cent., or 1 in 12
Simple Fever, . .	171	3	1·75 per cent., or 1 in 57
Scarlatina, . .	84	19	22·61 per cent., or 1 in $4\frac{1}{2}$ nearly
Measles, . . .	162	23	14·19 per cent., or 1 in 7
Varicella, . . .	29	—	—
Pneumonia, . .	93	18	19·35 per cent., or 1 in 5 nearly
Hydrocephalus, . .	1	1	100 per cent.
Tetanus, . . .	1	1	100 per cent.
Whooping-cough, .	2	—	—
Diphtheria, . . .	1	1	100 per cent.
Total, . . .	904	123	13·60 per cent., or 1 in $7\frac{1}{3}$ nearly

From 1st February to 31st December, 1879, out of 39 cases of typhus 9 deaths, or 1 in $4\frac{1}{3}$, occurred; in the year 1880, 14 deaths,

or nearly 1 in 5, occurred, in a total of 72 cases. For the half year to 30th June, 1881, 31 deaths occurred in 212 cases, or nearly 1 in 7, showing a steady decrease in mortality since the invasion of the epidemic. Of the entire number of typhus cases admitted (323) 7 were admitted in a dying state or died within 48 hours after admission. If this number be subtracted from the total number of deaths (54) the mortality will be still further reduced to 14·24 per cent., or 1 in 7. The mortality in measles (23 deaths in 162 cases, or 1 in 7) is very high, occurring principally during the inclement weather of February, 1879, and the months of May, June, September, and October, 1880. The deaths from enteric fever (1 in 12) are low, but the entire number of cases (37) is small.

TABLE IX.—*Showing the Total Number of Five Principal Diseases with the Mortality occurring in either Sex, from 1st February, 1879, to 30th June, 1881.*

Names of Disease	Total No. of Cases	MALES			FEMALES		
		No. of Cases	No. of Deaths	Mortality	No. of Cases	No. of Deaths	Mortality
Typhus Fever,	323	148	30	20·27 per cent., or 1 in 5	175	24	13·71 per cent., or 1 in 7½ nearly
Enteric Fever,	37	13	2	15·38 per cent., or 1 in 6½	24	1	4·16 per cent., or 1 in 24
Scarlatina, .	84	45	10	22·2 per cent., or 1 in 4½	39	9	23·07 per cent., or 1 in 4½
Measles, .	162	79	11	13·92 per cent., or 1 in 7 about	83	12	14·45 per cent., or 1 in 7 nearly
Pneumonia, .	93	78	11	14·10 per cent., or 1 in 7 about	15	7	46·6 per cent., or 1 in 2 about
Total, .	699	363	64	17·63 per cent., or 1 in 5⅔ about	336	53	15·77 per cent., or 1 in 6⅓ nearly

By this statement it will appear that the male deaths in typhus were 6·56 per cent. in excess of the female. In enteric fever the male mortality was also 11·22 per cent. in excess of that of the female. In both measles and scarlatina, occurring for the most part in children of tender years, there is a very slight difference in the mortality in both sexes. A very large proportion of the cases of pneumonia occurred in the male sex (78 against 15 female cases), and the excess of mortality in the females is equally striking, being 32·56 per cent. in excess of the males.

TABLE X.—*Showing the Periods at which Death occurred in Five Principal Diseases, from 1st February, 1879, to 30th June, 1881.*

Day on which Death occurred	Typhus Fever	Enteric Fever	Scarlatina	Measles	Pneumonia	Total No. of Deaths
3rd day, . . .	—	—	2	—	—	2
4th „ . . .	—	—	1	—	—	1
5th „ . . .	—	—	1	—	4	5
6th „ . . .	1	—	1	2	3	7
7th „ . . .	3	—	—	2	2	7
8th „ . . .	2	—	—	—	3	5
9th „ . . .	5	—	1	3	2	11
10th „ . . .	5	—	1	3	—	9
11th „ . . .	4	—	2	3	—	9
12th „ . . .	6	—	—	1	—	7
13th „ . . .	5	—	2	1	—	8
14th „ . . .	2	—	2	3	—	7
15th „ . . .	2	—	1	2	—	5
16th „ . . .	1	—	1	—	—	2
17th „ . . .	—	—	—	1	1	2
18th „ . . .	3	—	—	1	—	4
19th „ . . .	1	—	—	—	—	1
20th „ . . .	2	—	—	—	1	3
21st „ . . .	1	1	1	1	1	5
22nd „ . . .	1	—	1	—	—	2
23rd „ . . .	2	—	—	—	—	2
24th „ . . .	1	1	—	—	—	2
25th „ . . .	1	—	—	—	—	1
26th „ . . .	1	—	—	—	—	1
27th „ . . .	1	—	—	—	—	1
29th „ . . .	—	—	1	—	—	1
30th „ . . .	3	—	—	—	—	3
34th „ . . .	1	—	—	—	—	1
36th „ . . .	—	—	—	—	1	1
38th „ . . .	—	—	1	—	—	1
39th „ . . .	—	1	—	—	—	1
TOTAL, . .	54	3	19	23	18	117

The greatest number of deaths from typhus occurred between the ninth and eighteenth days—viz., 33, out of a total of 54, or 61·1 per cent. One death occurred as early as the sixth day, and

one was protracted until the thirty-fourth day. Nine deaths from scarlatina, out of a total of 19, or 47·56 per cent., took place between the tenth and sixteenth days; 2 cases of the malignant type proved fatal upon the third day, and 1, which was complicated with albuminuria and convulsions, occurred as late as the thirty-eighth day. The deaths from measles were in every case due to pulmonary complications, and in one instance to convulsions. Out of a total of 18 deaths from pneumonia, 14, or 77·7 per cent., occurred between the fifth and ninth days.

Of the 54 fatal cases of typhus, 7 were complicated with pneumonia, 2 with bronchitis, 1 with convulsions, 1 with phlegmasia dolens of *both* extremities on one side and hæmorrhagic vibices upon the trunk, 2 with the type of delirium known as delirium-ferox, 3 with retention of urine and paralysis of the muscles of deglutition, and 5 with hypostatic consolidation of one or both lungs. Two cases (neither of them fatal) were complicated with parturition—one, abortion at the sixth week; the other, delivery at the full time, the child being born living.

In support of the infectious theory of typhus, I may mention that during the entire period 12 nurses and sick-attendants contracted the disease, of whom 6, or one-half, died; and 3 patients who were under treatment for other affections (one of them a case of enteric fever in whom a copious typhus maculation coexisted with the enteric spots) were similarly infected.

The following cases sent into hospital “for observation,” for the most part prior to the development of their symptoms, were also treated during the entire period:—

Disease	Number of Cases	Deaths	Disease	Number of Cases	Deaths
Rheumatic Fever, . . .	17	1	Roseola,	3	—
Gastric Fever,	5	—	Urticaria,	2	—
Erysipelas,	1	—	Parotiditis,	4	—
Pleuritis,	12	1	Tonsillitis,	3	—
Bronchitis,	7	2	Stomatitis,	1	—
Pleuro-Pneumonia, . . .	2	—	Cystitis,	1	—
Phthisis,	2	—	Ulceration of Stomach,	1	1
Meningitis,	2	—	Hæmaturia,	1	—
Delirium Tremens, . . .	3	—	Syphilis,	1	—
Pericarditis,	2	—			
Erythema,	3	—	TOTAL,	73	5

ART. XV.—*Is it desirable that there should be a System of Compulsory Notification of Infectious Diseases? and, if so, what is the Best Method of Carrying such a System into Effect?* By J. W. MOORE, M.D., Univ. Dubl.; Vice-President and Fellow, King and Queen's College of Physicians; Physician to the Meath Hospital, and to Cork-street (Fever) Hospital, Dublin, &c.^a

IN an instructive and amusing address on "Our Medical Literature," delivered before the International Medical Congress at the recent meeting in London, Dr. John S. Billings, Surgeon in the United States Army, laid down four rules for the preparation of a paper like the present. They are these:—1. "Have something to say; 2. Say it; 3. Stop as soon as you have said it; 4. Give the paper a title." I will endeavour to follow the first three of these excellent rules, but the fourth is not applicable, as a title has already been given to my Paper. Had I selected one myself, I would have omitted the third part of the printed title,^b as it is my intention to devote the short time at my disposal to the consideration of "compulsory notification of infectious diseases," and this, not because I fail to recognise the importance of "compulsory isolation of those ill of infectious disorders," but simply because the subject is too wide to be dealt with in a short paper.

(a.) *Is it desirable that there should be a System of Compulsory Notification of Infectious Diseases?*

Before answering this question, a definition of *notification* is called for. Two things would seem to be necessary in the case of outbreaks of epidemic infectious diseases—first, *the immediate compulsory notification of such outbreaks to the sanitary authorities*; secondly, *the early registration of all cases of these affections, and the publication of the tabulated results at frequent intervals by the General Registration Offices of each division of the United Kingdom.*

Now, it happens that in the literature of the subject "notification" and "registration" have been used almost as synonymous terms, whereas they really mean very different things. If "notification" is to be of any use in preventing the spread of epidemic disease, it must be timely, given without a moment's delay on the detection of the earliest cases of the outbreak. Also, it must be

^a Read in the Health Department of the Social Science Congress, Dublin, October, 1881; and now published by permission of the Council of the Social Science Association.

^b It is here so omitted.—J. W. M.

given to that body which is directly responsible for the public health—the Sanitary Authority, or to its representative, the medical officer of health. “Registration” is quite another thing. It can be carried out more leisurely, and by an altogether different machinery. The units with which both notification and registration will deal are indeed the same; but in the case of notification they will be used singly and at once, with a view of isolating disease, whereas in registration they will be grouped and classified, with a view to publication and as a contribution to statistical medicine, or rather “Vital Statistics.”

Registration of infectious diseases is a corollary to notification, and must sooner or later follow the establishment of any system of the same.

It was lately my good fortune to hear Mr. John Simon summing up the views of many speakers in an important debate in the State Medicine Section of the International Medical Congress, of which section he was the distinguished President. The subject for discussion was “Home Contagia.” Much had been said about the notification and registration of infectious disease, but more had been said about disinfection and isolation. Mr. Simon recalled the Section to the paramount importance of the former topic by quoting from Mrs. Glasse’s *Cookery Book* (dating from the last century) that lady’s quaint but apocryphal receipt for making hare soup, “*first catch your hare, and then skin it!*” He justly observed that for disinfection and isolation to be of effect we must obtain early information of the outbreak, whereabouts, and nature of disease; and this can be effected only through an efficient system of notification.

At the present day it appears almost waste of time to question the desirability of possessing such a system. Instances are constantly coming under the notice of hospital physicians in which scarlatina, small-pox, measles, and fever have spread far and wide, because the first case of illness, either through wanton neglect or in ignorance, was not isolated in due time. Some two years ago several cases of scarlatina were admitted into Cork-street Hospital in this city, from a tenement house in which a child had died of the disease and was waked. No medical practitioner had been called in to see the patient, nor was any report made to the sanitary authority until other children in the house had been attacked. At least two lives were lost in this instance, which is only one out of many which might be adduced.

Last August, within half an hour after entering a hotel at Ryde, Isle of Wight, my ears caught the well-known whoop of whooping cough, and a little investigation proved that a child suffering from this most catching complaint had been brought for change of air to the hotel, which was crowded, and in which the children of the landlord were resident. Would this have been tolerated had a general Act for compulsory notification been in force? Advisedly I use the words "general Act," for nothing can be more impolitic than the present system of piecemeal legislation which is granting widely differing powers to various local sanitary authorities. If it were only to put a stop to this state of things, the time has fully come when a universal and uniform system of notification is called for. When discussing the second part of the question I shall have more to say on this point.

On September 13, 1879, the Leicester Corporation Improvement Act came into force. This measure included provisions for the compulsory notification of infectious diseases by what is now known as the "dual method"—that is, by the medical attendant as well as by the head of the family or occupier of the infected house. And, by the way, the clauses in the bill seeking for such powers evoked a strong opposition on the part of the members of the medical profession in the town, and they petitioned Parliament against them, on the ground that the provisions "imposed upon them new and onerous and unnecessary obligations," and that "these obligations were inquisitorial in character, uncalled for, and likely to lead to endless mischief and complication." Notwithstanding, the bill passed, and, as I have said, came into force on September 13th, 1879. Scarlet fever was at the time rife in Leicester, and the sanitary authority at once used their new powers in the attempt to check the epidemic. The number of certificates of scarlet fever cases sent in during the last fifteen weeks of 1879 was 496, and Dr. William Johnston, the able medical officer of health for the borough, remarks that the acme of the epidemic occurred a week after the fresh powers for notification came into operation, much earlier than on previous occasions, while the deaths afterwards recorded afford, by their very uniformity, an unmistakable sign of a successful interference with the future spread and development of the disease. Dr. Johnston believes that in the last fifteen weeks of 1879 no less than 41 lives were saved to the town, and 287 homesteads were preserved from an invasion of scarlet fever through notification.

But, as an incontestable proof that the time has now arrived when notification is to be considered not only desirable but essential, let me refer to the published account of the proceedings which took place at the office of the Local Government Board for England, on Tuesday, May 3, 1881. On that day a large deputation waited upon Mr. Dodson, M.P., the President of the Board, to urge that the Government should give effect, by legislation, to resolutions passed in the interests of public health by various bodies in London and the country, for the amendment of the Public Health Act, and especially for the compulsory notification of cases of infectious diseases. The British Medical Association was represented by Dr. A. Carpenter, of Croydon, President of the Council; Dr. Farquharson, M.P.; Mr. Ernest Hart, the editor of the *British Medical Journal*; and Mr. Francis Fowke, the General Secretary. The Society of Medical Officers of Health was represented by Dr. Bristowe, the President, and six other gentlemen. The Vestries and District Boards of London were represented by General Boileau, Mr. Watherston, and forty other gentlemen. The Social Science Association was represented by Mr. Michael, Q.C., while Mr. Ernest Hart also attended as Chairman of the National Health Society.

After several gentlemen had spoken, Mr. Ernest Hart said that Mr. Dodson could now see, from the representations which had been made by that conjoint deputation, that there was a general agreement between the medical profession and the public as to the necessity of a compulsory notification of infectious diseases in private families. Mr. Hart had had the honour, some time ago, of addressing Mr. Dodson's predecessor, Mr. Selater Booth, on the same subject; and Mr. Selater Booth held that, though it was important, at that time it had not entered into the "realm of practical politics" or of "practical statesmanship," and he told the deputation which waited upon him that before anything could be proposed by the Government, or carried by Parliament, the public must be educated in the ideas which Mr. Hart then put forward in support of his "model clause" for the notification of infectious diseases. Mr. Hart thought that it must be apparent to Mr. Dodson, and to "practical statesmen," that that step had been surmounted—that the public mind had been sufficiently educated on the question to render the matter ripe for the "realm of practical politics." He pointed out that there were present the representatives of the local governing powers of the vast population of

London, and they had unanimously agreed to resolutions which showed that the education of the public on the matter had advanced so that the necessary preliminary, in the opinion of Mr. Sclater Booth, to proposed legislation had already been reached.

Viewed as a problem in political economy, there can be no doubt as to the paramount importance of ascertaining the actual sanitary state of a population at any given time. Can this be done satisfactorily save by an effective system of notification and registration of disease? Difficulties, no doubt, stand in the way of carrying out this great work, but they are not insurmountable; and the fact that several European Governments have long since inaugurated and prosecuted such a system should encourage us in essaying to follow their example. In the vanguard of progress in this direction the Scandinavian nations occupy the place of honour. Nor should it be forgotten that even in the United Kingdom the notification and registration of epizootic infectious diseases is already in force—a fact which cannot but be regarded as a strong argument in support of the necessity for, and the practicability of, notifying the infectious diseases which assail mankind.

But these are all considerations of State policy, and affect not so much the individual as the community at large. What shall we say as to the bearing of notification of infectious diseases upon the home-life? With all reverence, let us speak of such affections as “preventable,” and, if they are preventable, how best can they be warded off? Surely by timely warning of the threatening danger. My heart bleeds as day after day I see in the wards of our epidemic hospitals the fever-stricken victims of sanitary neglect, and in our general hospitals the still more miserable survivors of the pestilence, dying a lingering death from one or other of the dread sequelæ of scarlatina, measles, or typhoid fever. Yes, it is fully time for the State to insist that the presence of scarlet fever in a dairy shall be made known to the sanitary authority and the medical officer of health at the earliest opportunity; that the occurrence of a case of typhoid fever shall at once attract attention to the drainage of a dwelling-house; that a child suffering from whooping-cough shall not be brought to a hotel for change of air; that parents shall not send their children “peeling” after scarlet fever or measles to a public school—that, in a word, early and accurate information as to the origin and whereabouts of disease shall be obtained in order to protect the healthy from its attack. Let light—the light of knowledge—be thus thrown upon the paths

of the "pestilence that walketh in darkness," and who will venture to estimate the gain to the health and therefore the happiness and welfare of mankind.

(b.) *What is the Best Method of carrying into effect a System of Compulsory Notification of Infectious Diseases?*

On all grounds it is most desirable that whatever system of notification is finally adopted shall apply uniformly to the whole country. Nothing can be more detrimental to the success of notification than to have it carried out by different methods in different places. And it is just because so many local authorities are at present obtaining powers for notification—powers differing in nearly every case, and intended to be put in force by very different machinery—that national or imperial legislation on the subject can no longer with safety be postponed.

Let us consider what methods of notification have hitherto been suggested or adopted. It is quite clear that in any given case the only persons who can be looked to for accurate information as to the occurrence and nature of disease are—first, the medical attendant; secondly, the person in charge of the patient, or the head of the family, or the occupier of the house in which the sick person lies.

Notification by the medical attendant may be *direct* or *indirect*. Under the former plan a medical practitioner, called in to see a patient, is *bound*, as soon as he recognises the disease to be infectious, to notify the fact to the sanitary authority; according to the second plan, under similar circumstances it becomes his duty to inform the person in charge of the patient or the head of the family, verbally, or by written certificate, what the disease is and that it is infectious, and the person so informed is then bound to forward the information with as little delay as possible to the sanitary authority.

Notification by the person in charge of the patient, or the head of the family, or the householder, may be made independently of the attendance of a medical practitioner.

There is another method of reporting which is called the "dual method," namely, notification by the occupier of the infected house to the sanitary authority, an independent certificate being sent to that authority by the medical attendant.

All these various methods, more or less modified, are now in force. I will not, however, delay to enumerate the towns which

have sought powers to compel notification according to one method or another, but will hasten on to consider in some detail the merits and demerits of each system.

I. *Notification by the medical attendant directly.*—This would seem to be the best and simplest plan of all. A medical practitioner is called to see a patient, whom he finds suffering under fever, measles, scarlatina, smallpox, or diphtheria. Having satisfied himself as to the correctness of his diagnosis, he fills up a certificate, and an accompanying block to be retained in his own possession, and with the least possible delay transmits said certificate by hand or post to the sanitary authority, from which body it is proposed that he should receive a fee.

Now, what has been or can be said against this plan? In the first place, it is alleged that any such proceeding on the part of a medical attendant would be a direct violation of the confidential relations existing between a patient and his physician, and a gross breach of medical etiquette. This is a somewhat illogical objection. Surely it is for the client and not for the physician to pronounce what is a violation of confidence, and this question is not raised at all if the medical attendant notifies merely in compliance with the provisions of an Act of Parliament. Before such an Act is passed, it is reasonable to suppose that the sense of the constituencies of the members of the House of Commons on the subject of compulsory notification by the medical attendant will have been pretty accurately gauged, and it is for the heads of families composing those constituencies, and for the peers who sit in the hereditary chamber, to declare if any violation of confidence is implied in the notification of infectious diseases by the medical attendant by withholding their assent to the principle of the proposed measure.

There is, however, a more rational and consequently a far weightier objection to direct notification by the medical attendant. If there is no obligation on the householder to notify, he may—knowing that the medical attendant must notify—delay to call in a trustworthy man, or resort to some quack or irregular practitioner, who will find a way to evade the law. This is not unlikely to happen among dwellers in tenement houses, the very people we wish to reach by notification, and in the lighter forms of infectious diseases, which are well known to be the most dangerous of all to the community. This objection cannot fail to carry weight when the whole question comes to be publicly discussed; but it may be met by the introduction of a clause into

the Act of Parliament, as suggested by the King and Queen's College of Physicians, providing that if no medical practitioner be attending on, or has been called in to visit a patient suffering from an infectious disease, *the occupier shall procure the certificate of a registered medical practitioner as to the nature of such disease.*

II. *Notification by the medical attendant indirectly.*—This is the plan which has received the sanction of the British Medical Association. It is proposed that the medical attendant, on becoming aware of the infectious nature of the case, shall inform the person in charge or the householder, who shall at once communicate with the sanitary authority.

Even with this modified plan the medical profession is apparently not satisfied unless the information be given only *verbally* to the person in charge of the patient or the householder. And yet, can we believe that the system would work unless a *written certificate* is filled up by the medical attendant and formally handed to the proper person, who shall then forward the information, again in writing, to the sanitary authority?

The great objection to this plan is—loss of time. In a case where every moment is of value, hours or even days may elapse before the person in charge of the patient or the anxious, fretted head of the family may recollect that it is his duty to inform the sanitary authority. Should this method be finally adopted, there is, however, a plan by which this objection can be to a great extent surmounted. This I shall presently mention.

III. *Notification by the person in charge of the patient or the householder*, so far as I can ascertain, has not been adopted exclusively in any town except Greenock. At Birkenhead and Reading it is proposed to have direct notification by the medical attendant; but if no duly qualified practitioner has been called in, the duty of notifying devolves upon the occupier or other responsible person having the control of a house. This plan, as has been pointed out by Mr. Ernest Hart,^a is open to the objection that, if a person knows that by not calling in medical assistance he can better conceal the existence of infectious disease in his house, he is likely to neglect or delay procuring such advice.

Some of those who feel so keenly for the tender susceptibilities of the medical profession, and who are so jealous of its supposed "rights" and "privileges," are in favour of notification by the

^a Report on Local Legislation as to Infectious Diseases. Brit. Med. Journal, March 12, 1881. P. 375 et seq.

householder alone. They maintain that the physician's duty should begin and end with a simple declaration to the householder or person in charge of the patient as to the nature of the malady—in fact, the medical attendant need not open his mouth unless he is asked the question, "Is the disease infectious?" How worthless such a system would be those can best judge who are accustomed to attend the sick, among the labouring and artisan classes, in tenement houses in the lanes and alleys of large cities.

IV. There remains the *dual system of notification*, according to which both medical attendant and occupier are obliged to give notice to the sanitary authority, independently of each other and in all cases. There are two grave objections to this plan. First, the system is unnecessarily complex, and will probably lead to confusion at the office of the sanitary authority, for the information will not reach the office from both sources simultaneously. Secondly, I know of no method which is more calculated to bring the medical attendant into unpleasant relations and even conflict with his patient or his patient's family; for, should the householder omit through negligence or design to notify, the medical attendant's certificate will be used to convict him—a proceeding which can hardly fail to provoke bad feeling.

These, then, are the proposed methods of notifying the occurrence of infectious disease. It is now necessary for me to state which plan I consider would be most feasible and most efficient. I have already said that direct notification by the medical attendant is the best and simplest plan. It has been tested in the case of Edinburgh, and Dr. Littlejohn, the medical officer of health of that city, assures me that so far it has worked admirably. There has been no protest from the medical profession, and no householder has felt aggrieved. Still, in face of the opposition of the profession, and because there is a tangible objection to it, I am prepared to give up this plan in favour of a modified system of indirect notification by the medical attendant through the householder (method II.). For the modification I am indebted to my friend, Dr. G. Purcell Atkins, the resident medical officer of Cork-street Hospital.

Let the medical attendant, on recognising that a case is infectious, fill up, *in writing*, a certificate, stating the name of the patient, his residence, and the nature of his malady, and let him hand this certificate to the responsible person in charge of the

patient, who shall then forward the information contained in the medical certificate to the sanitary authority. At the foot of the certificate the words "*No immediate attention is required*" may be printed, so that when the certificate goes forward the sanitary authority need not send their inspector to a private dwelling-house, for instance, unless the word "No" has been erased. This plan is adopted in Edinburgh, and has given complete satisfaction. So far this is indirect notification by the medical attendant; but how do we ensure that the responsible person will at once forward the requisite information? In this way—immediately on receiving the message, let the clerk of the sanitary authority or the medical officer of health acknowledge its receipt to the attendant physician. Should the last-named not get the acknowledgment within twenty-four, thirty-six, or say forty-eight hours, let it be his duty to forward a duplicate certificate to the sanitary authority. No doubt delay will occur when the householder neglects to forward the information, but no system can be regarded as perfect, and the instances of neglect of duty on the part of the householder will probably be comparatively few, because he knows that, should he omit to send the notice, the medical attendant will have to notify—a contingency which is to be avoided if possible, as there will be a substantial penalty to which the housekeeper will render himself liable by his neglect. Also he can have no grievance against the medical attendant, who in the first instance does not move in the matter at all.

Only two or three points now remain for consideration. And first, it is fitting and just that the medical profession should be adequately recompensed for the great service rendered to the State by any system of compulsory notification of infectious diseases. To offer a member of a learned profession *one shilling* in return for an important public service is an injustice and an insult. If the information obtained by compulsory notification is worth having, it is worth paying for; nor is there any reason in law or equity why a physician should not receive a *guinea fee* for his certificate of notification, as he does for a certificate of lunacy or for a certificate of death handed in to an insurance office. This question of fee is, I hold, the great and only grievance of the medical profession in connexion with compulsory notification. It should not be left only in the hands of a local sanitary authority, but should be met by an annual Treasury grant in aid of the expenses incurred by the local authorities.

Secondly, what diseases should be notified? Smallpox, scarlet fever or scarlatina, measles, among the exanthemata; typhus, typhoid, and relapsing fever, among the continued fevers; puerperal fever, erysipelas, diphtheria, whooping-cough, and cholera (including cholérine, or English cholera), should certainly be included in the schedule to the Act of Parliament. Moreover, the Local Government Board of each division of the United Kingdom (called the "Board of Supervision" in Scotland) should be empowered to add to the list "any contagious or infectious disease" represented to be dangerous by one or other of the three Colleges of Physicians.

And here, *en parenthèse*, I would refer to the absurdity of mentioning "scarlatina and scarlet fever," as if there were two different diseases known under these names. In England, indeed, there is a prevalent idea that scarlatina is a mild and harmless affection, quite different from scarlet fever. But this is a misleading and most mischievous popular error, not to be countenanced for a moment. Practical physicians know that it is the very mildest cases of scarlet fever (the so-called "scarlatina") which are most dangerous to the public health. The phrase should run "scarlatina or scarlet fever."

In conclusion, I would earnestly commend the topics with which this paper deals to the thoughtful consideration of all who desire to aid in that humane and Christian work which it is the province of preventive medicine not only to undertake but to fulfil.

ART. XVI.—*The Horizontal Cephalic Index.* By J. F. KNOTT, F.R.C.S.I., L.K.Q.C.P.I.; Demonstrator of Anatomy, Royal College of Surgeons, Ireland.

THE most prominent of the characteristics which serve to distinguish the races of mankind are to be found in the cranium; and, as the best part of the information which has been collected on this subject by various observers is still stowed away in the pages of journals and periodicals which seldom meet the eye of the medical public, it has been thought that a short account of the subject, embracing the principal results of the most reliable authorities, might not be unacceptable to the readers of the *Dublin Journal of Medical Science*.

The most important classification of human skulls, and that now universally adopted by anthropologists, is the one made by Retzius some years ago. His division, in the simplest words, is into the *long* and the *broad*. His method of calculation was by determining the ratio of the maximal longitudinal and transverse measurements of the skull in a horizontal plane. In all well-shaped skulls, the antero-posterior measurement is the greater, but the proportion varies within wide limits. Taking this diameter at 100, the length of the transverse diameter of the skull may vary from about 92 to 62. If the latter be at 80, or above, the skull is said to be *brachycephalic*; if below, it is called *dolichocephalic*.

In taking these measurements the antero-posterior is first calculated, and with one prominent exception (that of Welcker), all anthropologists agree in making it to be represented by a straight line reaching from the *ophryon* (central point of glabella) in front, to the most prominent point of the occiput (*point occipital maximal*) behind. With the points of the compass held in a perfectly *horizontal* position, the maximum transverse diameter of the skull is then taken in whatever position it may happen to fall—taking care, however, not to descend too low, so as to avoid the supra-mastoid prominences, which sometimes project so considerably as to be a source of fallacy. In calculating the antero-posterior diameter, M. Welcker measures, not from the ophryon, but from a point situated medially between the frontal eminences (*point metopique* of Broca). Broca himself calculated this measurement for another purpose, under the name of the *antero-posterior metopic* diameter. From these data the horizontal cephalic index may be calculated, its formula being as follows:—

$$\frac{\text{Transverse diameter} \times 100}{\text{Antero-posterior diameter.}}$$

Excluding extreme particular cases this index varies from 71·4 (Greenlanders) to 85·63 (Lapps). In particular cases, still excluding deformed skulls, the index has been found to range between 62·62 (Neo-Caledonian) and 92·77. If deformed skulls be included, the range extends from 56·33, in case of a scaphocephalic cranium, to 103, which was found in a Peruvian skull.

Since the nomenclature of Retzius became popularised among anthropologists, it has been considered advisable to use some other terms to designate skulls of medium indices. Broca, whose

classification is most used, inserted three intermediate groups, and arranged the whole as follows:—

Dolichocephali . . .	75 and downwards
Sub-dolichocephali . . .	75·01–77·77
Mesaticephali . . .	77·78–80
Sub-brachycephali . . .	80–83·34
Brachycephali . . .	83·34 and upwards.

The division adopted by Thurnam differs in the measurements, although most of the names are identical:—

Dolichocephali . . .	71 and downwards
Sub-dolichocephali . . .	72–73
Orthocephali . . .	74–76
Sub-brachycephali . . .	77–79
Brachycephali . . .	80 and upwards.

In Huxley's classification the names are further modified:—

Mecistocephali . . .	69 and downwards
Mesocephali . . .	71–74
Orthocephali . . .	74–77
Sub-brachycephali . . .	77–80
Eurycephali . . .	80–85
Brachistocephali . . .	86 and upwards.

In Welcker's system the orthocephali are from 74 to 78; sub-brachycephali 79–80; and the brachycephali 81 and upwards.

The following table of the cephalic indices of the various races of mankind is from M. Broca:—

True Dolichocephali.

27 Australians	71·49
21 Esquimaux of Greenland	71·71
54 Neo-Caledonians	71·78
18 Hottentots and Bosjesmans	72·42
8 Kaffirs	72·54
85 Negroes of Western Africa	73·40
6 Cro-Magnum and Diluvium of Paris (Palæolithic age)	73·34
19 Troglodytes of Lozere (polished-stone period)	73·22
22 Nubians of Elephantine	73·72
19 Arabs of Algeria	74·06
12 Pariahs of Calcutta	74·17
11 Berbers	74·63



Sub-dolichocephali.

54	Dolmens of North of Paris (polished-stone period)	75.01
28	Corsicans of Avapessa (18th century) . . .	75.35
20	Guanches of the Canaries	75.53
81	Ancient Egyptians	75.58
26	Dolmens of Lozere (polished-stone period) . .	75.86
10	Tasmanians	76.11
41	Polynesians	76.30
81	Merovingians	76.36
12	Modern Egyptians, Copts	76.39
60	Spanish Basques (Guipuzcoa) ,	77.62
28	Chinese	77.60

Mesaticephali.

44	Troglodytes of the Marne (polished-stone period) .	78.09
36	Gauls	78.09
25	Mexicans (undeformed)	78.12
53	Normans of 17th century (Saint-Arnauld, Calvados)	78.77
49	Dutchmen	78.89
16	Troglodytes of the Oise (polished-stone period) .	79.50
384	Parisians (from 12th to 19th century) . . .	79.45
27	Americans (Central), undeformed	79.16
36	———— (Northern) „	79.25

Sub-brachycephali.

57	French Basques (Saint-Jean-de-Luz)	80.25
4	Esthonians	80.39
63	Bas-Bretons of the Côtes-du-Nord (Breton Cantons)	81.25
11	Mongols (different sources)	81.40
11	Turks	81.49
29	Javanese (Vrolik's collection)	81.61
73	Bas-Bretons of Côtes-du-Nord (Gaulish Cantons)	82.05
11	Alsations and Lorrains	82.93

Brachycephali.

10	Indo-Chinese	83.51
22	Savoyards	83.63
5	Finns	83.69
88	Anocognats (Saint-Nectaire-le-Haut)	84.07
11	Croatians	84.83
6	Bavarians and Swabians	84.87
11	Lapps	85.07
12	Syrians of Gebel-Cheikh (slightly deformed) .	85.95

The next table of races and indices is from M. Pruner Bey:—

Americans of the Pampas,		Intermediary Americans . . .	} 77
Bogota, &c.	93	Araucanians (men) . . .	
Americans of Vera Paz . . .	87	Chinese (men)	} 77
Germans (South)	86	Ancient Romans	
Laos	} 85	Kabyles (men)	} 76
Annamites		Aëtas (men)	
Brachycephalic Turks . . .		Tasmanians (women) . . .	
Brachycephalic Malays . . .		Dolichocephalic Celts . . .	
Javanese	} 84	Scandinavians (men) . . .	} 75
Borneans		Dolichocephalic Bretons . .	
Brachycephalic Peruvians . .		Modern Italians (men and	
Puelches		women)	
Lapps	} 83	Arabians	} 75
Ancient brachycephalic		Sclaves (men)	
Europeans		New Zealanders	
Kalmucks		Dolichocephalic Kanaks . .	
Brachycephalic Bretons . . .	} 82	Micronesians	} 75
Brachycephalic Kanaks . . .		Tasmanians (men)	
Aëtas (women)		New Guineans (women) . .	
Ancient Europeans		Dolichocephalic Turks . . .	
Malays (women)	81	Etruscans	} 74
Brachycephalic New	} 80	Phœnicians	
Guineans		Scandinavians (women) . .	
Mexicans		Tahitians	
Brachycephalic Peruvians		Americans of Brazil, Peru,	} 73
(women)	} 79	&c.	
Indo-Chinese		Araucanians (women) . . .	
Tagals		Negroes (women)	
Belgians	} 78	Kaffirs	} 72
Dutch		Semitic Hindoos	
Hovas		Ancient Celts (men and	
Papuans with aquiline nose		women)	
Red-skins	} 77	Irish	} 72
Chinese (women)		Negroes (men)	
Bellovaques (men)		Sacalaves (women)	
Modern Greeks		Australians (women) . . .	
Kabyles (women)	} 77	Brahmins	} 72
Jews (women)		Dravidians	
Kouronglis (both sexes) . .		Persians	
New Guineans		Bellovaques (women) . . .	

Bosjesmans	.	.	.	.	.	.	.	}
Hottentots (women)	.	.	.	.	.	.	.	}	70
Hottentots (men)	.	.	.	.	.	.	.	}
Esquimaux	.	.	.	.	.	.	.	.	69

M. Broca carried his calculations to the fourth place of decimals, and M. Pruner Bey to the third. I have gone no further than the second, as I think that the more important figures so afforded will strike the eye more forcibly. M. Pruner Bey distinguishes the sexes, which are united by Broca; the latter, on the other hand, has grouped together the Hottentots and Bosjesmans, which are separated by the former, &c.

A calculation from the above table of M. Broca gives a mean horizontal cephalic index of 78 (excluding deformed skulls), which represents true mesaticephaly. According to the calculations of M. Diétrici, it would appear that, taking the total population of the globe at 1,288 millions, 1,026 millions of these are dolichocephali, and only 262 millions brachycephali. He disregards, however, the intermediate groups mentioned above, and places in the first category the whole Chinese population, which includes 421 millions. These are true mesaticephali, and a comparison of the tables of Broca and Pruner Bey, and others more lately compiled, with the observations of M. Diétrici, lead us to agree with Quatrefages in the opinion that the mesaticephali embrace a larger proportion of the human race than either the brachycephali or dolichocephali.

An early result of the determination of the cephalic index in a sufficient proportion of the leading races of mankind, was the overthrow of a doctrine of Retzius himself, which attracted much interest at the time of its first promulgation. This was a belief that the autochthonous races of Europe (represented by the Finns and the Basques) are brachycephali, while the immigrant races are all dolichocephali. The discovery that the skulls of the Basques are dolichocephalic weakened the faith of those who had been disposed to accept this hypothesis, which was completely overthrown by the results of measurement of the oldest fossil crania of Europe, which were found to be also of the dolichocephalic type.

Examination of the above tables also shows, very strikingly, the results of the intercrossing of the various races. The negro races are generally of the extreme dolichocephalic type, the only prominent exception being the Aëtas. This race has been shown by

Quatrefages to comprise a group of populations extending from the Andaman and Philippine Islands to Torres Strait in Melanesia, penetrating New Guinea, and in this way "forming a *special* branch in the midst of the Melanesian negro population." An analogous discovery with regard to the African population has been made by M. Hamy, who found six brachycephalic skulls among the Paris collections which had been taken from Cape Lopez, and the neighbourhood of the mouths of the Fernando Vaz. It was subsequently shown that of 93 skulls brought from the same districts by Duchailau, 27 were either brachycephalic or mesaticephalic. The researches of Schweinfurth have also confirmed this result. This observer places among the brachycephali the Niams-Niams and some other neighbouring tribes. The hypothesis of an isolated hyperborean race was irreparably damaged by the demonstration that the Lapps and the Esquimaux, which were united under that denomination, belong, the first to the extreme brachycephalic, and the latter to the extreme dolichocephalic types of human skull.

The skulls of the white races present a much wider range of variation than those of the yellow or black; and tables of cephalic indices show that the same index places side by side the most dissimilar races—the South German with the Annamite, the Breton with the Kalmuck, the Belgian with the Tagal, the Parisian with the Malay, and the Italian with the Maori (Quatrefages).

The general proportion of length and breadth in human crania exists from birth; but this assertion has been qualified by the researches of Gratiolet, who has shown that dolichocephaly is due to a relative development of certain cranial bones, which varies with the periods of life. In infancy it is essentially *occipital*, in the child it is found to be *temporal*, while he has ascertained that in adult life it is especially due to *frontal* development. In the female, the antero-posterior measurement of the cranium varies directly as the length of the temporal regions; and in this particular, then, the woman retains the characteristic of childhood all her life.

Basing his further observations on these data, Gratiolet has contrasted the dolichocephaly of white races with that of the African and Melanesian negroes. The former was found to be essentially frontal, while the dolichocephaly of the black races was always due to occipital development. M. Broca has also borne his testimony to the distinction, in comparing Basque skulls with those

of Parisians. Basing their views on the evidence afforded by these observations, some writers on anthropology have gone so far as to make occipital dolichocephaly a characteristic which widely separates the black from the white man. The absurdity of this conclusion has been definitely established by M. Broca, and the more scientific mind of M. Gratiolet himself explains the variation by a reference to the different degrees of evolutionary perfection arrived at by the different races. In the skull of the negro and of the Basque, we have but the persistence of an anterior condition which they shared in common with the white race. "The negro and the Basque preserve throughout life the cephalic character of the infant Parisian, thus forming one of the many examples of that cessation of evolution, which, as we see more distinctly every day, plays a considerable part in the characterisation of human races" (Quatrefages).

An examination of the facts above related proves, that although the horizontal cephalic index cannot, as Retzius was disposed to believe, serve as a starting-point in the classification of the races of man, yet its value in the characterisation of secondary groups must still be highly estimated.

The difference of the indices (from one extreme mean to the other) in the table of M. Pruner Bey is 24·6; in Broca's table it is 14·552. The difference is, however, chiefly due to the fact that the latter observer rejected, as deformed, skulls which were accepted by the former without apparent question. But if extreme individual instances be included, a much wider range of variation will be found to exist. In the skull of a Mongolian mentioned by Huxley, the index was as high as 97·7, and in that of a New Zealander it descended to 62·9. This gives a difference of 34·8. But the range is still greater if deformed crania be taken into consideration—a scaphocephalic skull of the Laboratoire d'Anthropologie (Paris) has a cephalic index of 56·33, and a Peruvian skull is preserved with an index of 103. The following names have been coined from time to time by the anthropologists of late years to express peculiar forms of cranial development:—

Acrocephalus (*oxycephalus*, *hypsocephalus*, *pyrgocephalus*), skull of high altitude.

Platycephalus (*tapeinocephalus*), flattened cranial vault.

Eurycephalus, broad skull.

Stenocephalus, narrow skull.

Trochocephalus, skull very rounded.

Trigonocephalus, triangular skull, with apex in front; supposed to be due to early synostosis of the medio-frontal suture.

Megalocephalus, cranium of exaggerated capacity.

Kephalon, skull thick and large (Virchow).

Leptocephalus (*microcephalus*), very small skull.

Macrocephalus, elongated skull.

Plagiocephalus, obliquely ovate deformity (Virchow); large skull, with flattened frontal region (Busk).

Cylindrocephalus, skull elongated and cylindrical.

Klinocephalus, skull with saddle-shaped vault.

Cymbocephalus, an exaggerated form of the preceding (hour-glass skull).

Scaphocephalus (*sphenocephalus*), boat-shaped skull.

Pachycephalus, thick-walled skull.

Hypsistenocephalus, *Oxyklinocephalus*. These skulls, as their names imply, present combinations of peculiarities already defined.

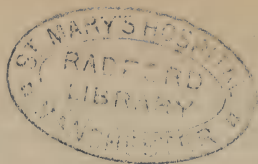
The opinion of Retzius, whose dictum was for some time accepted almost without question, referred the palm of intellectual superiority to the dolichocephali, but this conclusion has been vigorously attacked by Broca. The latter observer objects to the conclusion of Retzius, that the principal observations on this subject were made, first in Sweden, afterwards in England, in the United States, and in Germany; in all of which countries dolichocephaly largely predominates, and adds that there is a natural tendency for men, even of the most liberal turn of mind, to attach an idea of superiority to the dominant characteristics of their own race. The observations of this distinguished anthropologist (Broca) have rather led him to the opinion that the superiority should be accorded to the brachycephali; as he found that, in measuring the cubical capacity of a large number of skulls, the advantage remained with those of the latter type. He confesses, however, that even the preponderance of cranial capacity might not be accompanied by proportional elevation of the intellectual standard, and that the form of the brain (and, consequently, of its osseous investment) was an element of, at least, equal importance. The greater development of the frontal lobes of the cerebrum which accompanies frontal dolichocephaly (the type of the skulls of the Indo-European race), may, he acknowledges, compensate, and more than compensate, for the apparent inferiority indicated by the smaller volume of the encephalon. No appreciable difference of general outline had been seen by this observer between skulls of

the middle ages and those of the present century (12th and 19th centuries), and the chief observable variation was a somewhat greater proportion of the number of crania possessed of prominent frontal development.

The truth, however, is that the cranial capacity has no very definite proportion to the horizontal cephalic index. It is very obvious that where a diminution of one diameter is compensated for by an increase of another, no change in the total dimensions results. Also, we have the marked difference in the condition of skulls whose extreme measurements are identical. In calling attention to this point, Cleland has shown the importance of distinguishing the skulls which are well filled all around (*crania latioria*) from those which present deep depressions between the prominent points (*crania angustioria*). And, in regard to both cubical capacity and intellectual development, it may be said that individual variations are so frequent, and range so widely, that neither can be said, as in cases of the horizontal cephalic index, to bear any definite proportion to race or tribe. The subject is, however, of extreme interest at the present day, and will more than repay all the attention that can be bestowed upon it; for a knowledge of the horizontal cephalic index has come to be recognised as one of the most distinctive of the race-characteristics which distinguish the various sections of the human family.

CHLORAL HYDRATE LOCALLY IN DIPHTHERIA.

M. KORN (*Deutsch. med. Woch.*, May 28) praises highly the use of chloral hydrate in the local treatment of diphtheria. He employs a solution in glycerine, fifteen to thirty per cent., according to the age of the patient. The glycerine covers the taste of the chloral, and makes a solution of proper consistence for painting upon the diseased surfaces with a camel's-hair pencil. It relieves the pain and difficulty in swallowing, retards the formation of new membrane, breaks up and loosens the membrane already existing, and, acting as a disinfectant and antiseptic, prevents septic infection of the system at large. The solution quoted above should be applied to the throat every second hour, the patient being roused in the night for its administration in bad cases. In the worst cases the membrane altogether disappears in three or four days, and healthy granulation rapidly progresses. The application is not painful; Rokitansky has employed a fifty-per-cent. solution, causing some pain in sensitive patients.—*N. Y. Med. Jour. and Obstet. Rev.*, Sept., 1881.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Coulson on Diseases of the Bladder and Prostate Gland. Sixth Edition. Revised by WALTER J. COULSON, F.R.C.S. London: J. & A. Churchill. 1881. Pp. 607.

THE former editions of this book were so justly ranked among the standard works of medical literature that it is with peculiar pleasure we see this new edition appearing, albeit in modern attire, after the lapse of a quarter of a century. The progress of medical knowledge has been so great during these twenty-five years, that any book making its reappearance after such a long period of absence must in the nature of things be largely revised. The book before us has been almost entirely re-written, and many important alterations have been made in it. It has kept abreast with the times, and is a faithful exponent of the advanced views of the present day. The author has consulted the chief authorities on the subject, both on the Continent and in America as well as at home, and frequent references are made to their writings, especially to those of Gross and Ultzmann. It is a work suited alike to the student and the practitioner—to both it will prove an exhaustive and practical exposition of the diseases of the bladder and prostate.

The first alteration we notice is the omission of the chapter on the Chemistry of the Urine, with which the previous edition opened. We question the propriety of this change. The author excuses it on the plea that the subject was "too extensive to admit of suitable treatment in a work like the present." We think that the present work is the very place where such a chapter should be found. It is very unsatisfactory to find that the information which is required must be sought for up and down through the book, or by reference to the valuable index at the end. The present edition opens with chapters on the anatomy and physiology of the organs under consideration, and on the methods by which they should be examined. These are admirably compiled, and almost reconcile us to the loss of the chapter on Chemistry, whose

place they take. In the first chapter the question as to whether the bladder possesses the power of absorption or not is fully discussed, and the views enunciated by Sir H. Thompson, Professor Küss, and Dr. Mercier, are detailed. The absorbing power of the urethra seems admitted on all hands, but the results of experiments on the bladder have proved very contradictory. Dr. Mercier, of Neufchatel, draws the following conclusions:—(1.) "It is highly probable that in a healthy bladder absorption does not take place in any sensible degree, but it must be remembered that evidences of slight epithelial desquamation are to be found in the majority of specimens of urine. (2.) The alterations in the epithelium are very frequent and various; and this fact explains the differences in the absorption of certain substances, the absorption being always in direct proportion to the degree in which the mucous membrane is altered. (3.) The variations in the results obtained by experimenters are due to the fact, that some of the experiments were performed on healthy bladders and others on bladders more or less changed by disease." A very interesting account is then given of the nervous physiology of the act of micturition. The double nervous supply is described—one set of nerves, passing in the anterior roots of the third and fourth sacral nerves, supply the sphincter, and can be traced backwards along the anterior columns of the cord to the cerebral peduncle; the other set, contained in the hypogastric plexus, are derived from the lumbar enlargement of the spinal cord and supply the detrusor of the bladder. By this arrangement the author explains how in cases of spinal disease the most frequent symptom is that of paralysis of the body of the organ, as shown by retention of urine, whilst, as the disease progresses, the retention may be succeeded by true incontinence, due to a secondary paralysis of the sphincter. In the description given there is no allusion made to the inhibitory centre in the spinal cord, which plays such an important part in the physiology of micturition. The question is next discussed as to the power of the bladder to empty itself by its own contractions, and whilst it is recognised that in the lower animals this power holds good, in man it is exceedingly doubtful. The first chapter ends with a description of the prostate.

Chapters III., IV., and V., deal respectively with abnormalities, displacements, and wounds and injuries of the bladder. Chapters VI. and VII. give an admirable account of acute and chronic inflammation of the mucous membrane of the bladder. In the

latter chapter a variety of remedies are enumerated:—Balsam of copaiba, as recommended by Sir A. Cooper; Venice turpentine, as recommended by Dupuytren; the compound tincture of benzoin, which in Mr. Coulson's hands has yielded good results; the alchemilla arvensis, when the secretion of mucus is excessive; tannin, as suggested by Niemeyer; and many other remedies. No mention is made of the use of salicylates in cases of decomposition of the urine in the bladder, which in the hands of Dublin surgeons has proved so efficacious.

Chapter VIII. treats of parenchymatous inflammation of the walls of the bladder. It is shown to originate in the connective tissue and not in the muscular coat itself, which "is seldom, perhaps never, exclusively the seat of inflammation." From this connective tissue the inflammation has a great tendency to spread in every direction, so that the muscular structure may be secondarily wasted or in great measure destroyed. The small quantity of urine which escapes is of a dark colour, sometimes not unlike coffee in appearance; at other times it is of a deep red, and even blood colour. In the milder cases the symptoms may gradually subside; sometimes it terminates in an abscess in the walls of the organ, and the symptoms will then present a formidable character. If this abscess bursts into the cavity of the bladder great relief is experienced; but it may open into the cavity of the abdomen, or into the rectum or vagina, or into the cellular tissue of the pelvis—such cases usually terminating fatally.

In Chapter XI. tumours of the bladder are discussed at length. A very interesting case of mucous polypi, which terminated fatally, occurring in a child, aged one year and a half, under the care of Mr. Crosse, of Norwich, is detailed, in which the bladder was opened tentatively, and found to be full of these mucous growths. A careful distinction is drawn between non-malignant villous growths and "villous cancer." The former are "purely local growths of a peculiar kind, an extreme tendency to bleed being the most marked feature which they present. Some resemble a solid polypus, with its surface covered with long vascular projections; others consist of a loose, shaggy mass of tissue, with but little solid tissue, and attached by a pedicle to a healthy surface of mucous membrane. This is the most typical form. In other cases the mucous membrane is dotted over with patches of villous growths or mamillary projections." "On the other hand, however, there can be no doubt that malignant growths occur,

springing from mucous membranes, and having their surfaces covered with shaggy projections; these may be justly called 'villous cancers.' The tumour in such cases has a solid base, and infiltrates the coats of the bladder. Dr. Ultzmann points out that these growths have an abundant epithelial investment, whereas non-malignant villous growths are but scantily furnished in this respect. The occurrence of fibrin and its coagulation in urine of a reddish-yellow colour are regarded by the same authority as pathognomonic of 'villous growths.'" The only case on record of sarcoma of the bladder, and recorded by Senfleben, is retailed; the rest of the chapter being devoted mainly to tuberculosis and malignant disease. A short reference is given to a case of the former, which occurred in the practice of Mr. Prescott Hewitt, in which a *post mortem* investigation showed that the bladder was extensively invaded by tubercular deposit, and the mucous membrane in a state of ulceration, but that in all other parts of the body tubercular disease was absent. Of the malignant diseases epithelioma receives a fair share of treatment, and a case of Sir H. Thompson's is recorded which lasted for *nine* years.

Fistula of the bladder and the method of operative treatment, *Neuralgia* and *Irritability* of the bladder, are next described, and in Chapter XIV. we find *Atrophy*, *Paresis*, and *Paralysis* treated of. Special emphasis is laid on the fact that paralysis of the bladder may occur from *reflex* irritability, as after operations, compound fractures, strangulated hernia, removal of hæmorrhoids, &c. A case which came under the notice of Mr. Lawrence is recorded to show how the involuntary flow of urine from an over-distended bladder has been mistaken for incontinence of urine—a mistake which not infrequently happens, but which can be attributed only to ignorance or gross carelessness. In drawing off the urine by means of catheter from a greatly distended bladder, Mr. Coulson advises people always to withdraw the urine gradually, and while the patient is in a recumbent position, as serious and even fatal symptoms have been known to follow abstraction of a large quantity of urine where these precautions have not been taken. The quantity of urine which may accumulate in advanced cases of paralysis is enormous. Winckel has withdrawn as much as nine pints from a woman. This enormous distensibility of the bladder has been explained by an experiment performed by Budge, who found that division of the spinal cord in the lower dorsal region was followed by increased reflex contraction of the sphincter

and distension of the bladder to a degree impossible to produce by artificial means after death. In the treatment of atony of the bladder, Civiale's method of injecting cold water is recommended, beginning always with tepid water, till the viscus gets accustomed to the injections, and then gradually lowering the temperature to about 60° F. Two or three injections of three or four ounces each may be thrown into the bladder, and repeated for a period varying from two to three weeks or four weeks. For electricity to be of use the induced current should alone be used, and one pole of the battery should always be placed inside the bladder, the other electrode being placed over the lumbar vertebræ or on the hypogastric region. Dr. Gross, of Philadelphia, speaks highly of strychnia combined with cantharides and arnica, and of ergot of rye.

Incontinence and *retention* of urine receive careful consideration; and in the chapter devoted to the latter we find the different methods of tapping the bladder and their relative merits discussed. Mr. Coulson is of opinion that of the various methods enumerated by him puncture through the rectum and external urethrotomy are the most suitable operations for the majority of cases—a view which we believe will be endorsed by the majority of Irish surgeons, in spite of the assertion that in Ireland the suprapubic operation has been and *is yet always* selected. The suprapubic may be had recourse to when the prostate is much enlarged.

Hæmaturia is dealt with in Chapter XVII. An account of the method of distinguishing blood in the urine is given, the surest means being the microscope. The description of the different appearances of the blood corpuscles is quoted from Roberts, and attention is called to the difficulty arising from the action of the urine upon them. This consists, in the first place, in removal of their red colour, and, secondly, in causing them to break up into smaller globular bodies of varying size. The sources from which the blood comes is considered under the following heads:—
1. Hæmorrhage from the urethra. 2. Hæmorrhage from the prostate and neck of the bladder. 3. Hæmorrhage from the bladder itself. 4. Hæmorrhage from the kidneys. 5. Hæmorrhage of a general character from the urinary tract. Each of these possible sources is discussed in detail, and will be found extremely useful in arriving at a differential diagnosis.

One of the most valuable parts of the book is that which treats of calculus. It occupies 250 pages. The author deals first with

the structure and chemistry of urinary concretions, and then with the causes of stone; the symptoms and diagnosis of stone and foreign bodies in the bladder follow. Chapter XXII. deals with the first of the methods of operative procedure—Lithotritry. It describes the operation previous to the introduction of Bigelow's method, to which the next chapter is exclusively devoted. This latter method, termed by the originator Litholapaxy, has proved so eminently successful that ordinary lithotritry promises to be a thing of the past. "The evacuating catheters and injecting bottles which were in use up to a recent date sufficed to effect only the removal of dust, or at most of small fragments, which under ordinary circumstances would escape with the urine." "The unsatisfactory results of all attempts to remove the broken-up particles led surgeons generally to believe that, except in cases where the bladder is unable to empty itself, it was better to allow all *débris* to be spontaneously evacuated." But Bigelow has revolutionised the views previously held. His experience led him to believe that "it is better to protract the operation indefinitely in time if then the whole stone can be removed without injury to the bladder." The secret of Bigelow's procedure lies in the evacuating catheters. These are of a size hitherto unheard of. Based on Professor Otis' experiments as to the true calibre of the urethra, Bigelow employs catheters which on the English scale would correspond to ones ranging from No. 16 to No. 18. They are of two kinds, straight and curved. The latter are more easy of introduction, but the former are more useful, when once introduced, for removing *débris*. Generally it is necessary to incise the meatus urethræ with a bistourie cachée before the catheter can be got in, but there is no objection to this proceeding. The obstacles more frequently met with in introducing these catheters are:—(1) Rigidity of the prostatic portion of the urethra, due to enlargement of the prostate; (2) a generally flaccid condition of the canal; and (3) adhesion of pulverulent *débris* to the lining membrane. The best methods of dealing with these obstacles is to pass the tube as far as it will go, and then attach the bottle and gently inject a little water; this dilates the urethra, and the tube readily follows.

Mr. Coulson considers that the lithotrite recommended by Bigelow is suitable only for very large stones. In all ordinary cases its large size and clumsy nature render it a less useful instrument than the lithotrite previously in use.

The statistics of cases of litholapaxy hitherto recorded are very strongly in its favour. Up to February, 1880, one hundred and seven operations had been recorded as performed in the United Kingdom and the United States, with only six deaths, all of which occurred in patients who were far from healthy.

Lithotomy next comes under discussion, and a description is given of the various methods of proceeding, Cheselden's operation being the one of all others which finds most favour. The chapter ends with statistics of these various methods. The prostate and its diseases are well treated of in the concluding chapters.

Altogether we congratulate Mr. Coulson on the sixth edition of this work. We regret that while putting forward the opinions of others he has too often suppressed the results of his own experience. By doing so he has detracted somewhat from the interest of the work, but he has made it a valuable book of reference, replete with the views held by the most eminent men in all parts of the world.

A Treatise on the Diseases of the Nervous System. By WILLIAM A. HAMMOND, M.D., &c., &c. Seventh Edition, re-written, enlarged, and improved. London: H. K. Lewis. 1881. 8vo. Pp. 929.

THIS work, the first edition of which appeared in 1871, has within the short space of ten years reached the seventh edition, and has been translated into French and Italian. Such a success as this shows that the book has supplied a real want, and places it almost beyond the range of criticism.

The chief alterations in the present edition are, the author tells us, "a considerable amplification of the chapter on cerebral congestion, the introduction of a chapter on myxœdema, of others on syphilis of the brain, the spinal cord and nerves; on the symptomatology of cerebral and cerebellar lesions, and a new section on diseases of the sympathetic nervous system. Material additions have also been made to the chapters on locomotor ataxia, progressive facial atrophy, chorea, epilepsy, neuralgia, and to many others to less extent. I have also added to the chapters on the symptomatology of cerebral and cerebellar lesions a translation of the diagnostic points given by Nothnagel in his remarkable work on the 'Topical Diagnosis of Brain Diseases.'" The chapter on insanity which existed in the previous edition has been omitted.

The author acknowledges his indebtedness to Dr. Labadie-Lagrave for much of the new matter.

The work is divided into six sections and an Introduction which treats of the instruments and apparatus used in the diagnosis and treatment of nervous diseases. The six sections deal with (1) Diseases of the Brain; (2) Diseases of the Spinal Cord; (3) Cerebro-spinal Diseases; (4) Diseases of the Peripheral Nervous System; (5) Diseases of the Sympathetic Nervous System; (6) Toxic Diseases of the Nervous System.

A large place is given to congestion and anæmia of the nervous centres, the symptoms of which are so various, and often contradictory, that it has been found necessary to divide congestion of the brain not only into active and passive, but each of these again into six clinical varieties. We cannot help thinking that the author makes the mere alteration in the quantity of blood in the brain and cord play far too large a part in their pathology.

On page 108 we meet with a curious passage. The author in discussing the share taken by miliary aneurisms in the production of cerebral hæmorrhage, details the particulars of a case which he recently examined, and which convinced him that extravasation of blood into the brain is not invariably due to this morbid condition. He gives a drawing of the artery from which he supposed the hæmorrhage to come. On the small part of it shown there are five minute aneurisms, four of which have given way. How this case could have influenced his opinion in the manner described is not clear.

In the treatment of hemiplegia, the result of hæmorrhage, numerous cases are recorded which benefited by the hypodermic injection of strychnia, where this drug given by the mouth produced no effect.

A long chapter is devoted to Aphasia, and considerable space is given to a review of the literature of this interesting subject. We are surprised, however, to find no notice of the large work of Kussmaul in Ziemssen's *Encyclopædia*, or of that of Hughlings Jackson, published in 1879 in *Brain*. Dr. Hammond does not admit the strict localisation of the brain lesion contended for by Broca, or even by Dax, but thinks that the organ of language is situated in both hemispheres, in the part which is nourished by the middle cerebral artery, but that there is strong evidence to show that the left side of the brain is more intimately connected with the faculty of speech than the right. A large number of cases are

recorded, which are classified as instances of amnesic aphasia, or those in which the memory of words is defective, while the patient can repeat any word spoken by another person, and as cases of ataxic aphasia, where even this power is absent.

Multiple or disseminated sclerosis is described in three chapters, according as the disease affects the brain alone, the cord alone, or both brain and cord. In the pure spinal form tremor is absent, the symptoms being—weakness of the limbs, disturbances of sensation, and later, paralysis with rigidity. The rhythmical tremor which has been so well described by Charcot and his school occurs only in the cerebral or cerebro-spinal form. Paralysis agitans is characterised by tremor affecting a greater or smaller number of muscles, and which is unaffected by voluntary movements, but is increased by mental emotion, or depressing causes of any kind. It seldom extends beyond the part originally affected, and if it does, it attacks neighbouring parts. It is accompanied by weakness of the affected muscles. There is no disturbance of sensibility, no bending of the body forward, no festination, and no head symptoms. It frequently occurs in young persons, and is rare after fifty. This account differs considerably from that of Charcot; and as regards the work of Parkinson, Dr. Hammond thinks that this author has described under the name paralysis agitans two distinct affections—one consisting of tremor only, functional in character, and easily cured; the other multiple cerebro-spinal sclerosis.

The chapter on Athetosis is peculiarly interesting, and is illustrated by some exceedingly graphic drawings showing the positions assumed by the hands in this affection. The author maintains stoutly that athetosis is a distinct pathological entity, and thinks that it can no more be confounded with posthemiplegic chorea, than ordinary chorea can be with disseminated sclerosis. “In athetosis the movements are slow, apparently determinate, systematic, and uniform; in posthemiplegic chorea they are irregular, jerking, variable, and quick.” Athetosis is frequently not preceded by hemiplegia, and may occur on both sides.

Myxœdema is classed with the diseases of the brain in consequence of the head symptoms, hallucinations, delusions, mania, &c., which are sometimes observed in this affection. These are supposed to be due to the formation of mucoid tissue about the nervous elements of the brain, similar to that formed in the skin and subcutaneous tissues. These head symptoms may precede the swelling of the body and limbs and the disturbances of sensation.

The chapter on Cerebral Syphilis is mainly the work of Dr. Labadie-Lagrave. In this we read of a gentleman, fifty years of age, who in his youth had chancre, and within a year after infection an eruption on his skin, but subsequently no syphilitic symptoms, who had been married for twenty years, and who, after great excitement in Wall-street, was suddenly attacked with pain in the head, vertigo, and paralysis of the third nerve. This is diagnosed as cerebral syphilis, which would certainly be a formidable affection if, after more than a quarter of a century of health, it could suddenly appear in consequence of doing a little jobbing on the Stock Exchange. The only evidence, however, for the syphilitic nature of the lesion appears to be the fact that the patient took mercury and iodide of potassium, and got well. Such a diagnosis is, to say the least, loose.

The chapter on the Symptomatology of Cerebral Lesions, also by Labadie-Lagrave, is, we think, not very good. The internal capsule is described as consisting of two portions—one formed of motor, the other of sensitive conductors, the former comprising the anterior two-thirds, the latter the posterior third. No notice is taken of the recent researches of Charcot, Brissaud, Flechsig, and others on the different tracts which are met with in this region. With regard to the much-vexed question of cortical localisation, the author, while admitting that the middle parts of the hemispheres have motor functions, thinks that each group of muscles is represented in every part of the motor area of the opposite side of the brain, and that if one part of this be destroyed the others can supply its place. We think, however, that there is abundant evidence, both experimental and clinical, against such a view.

Our space will not allow us to notice in detail any more of the interesting points in which this work abounds. We can only refer to the chapter on Epilepsy as containing much matter of great value, although we think the author extends the term epilepsy to some affections that would not generally be classed under this head. He does not give any very clear theory of this affection, but thinks that it is due to something more than a mere discharging lesion of the cerebral grey matter. In treatment he relies mainly on the bromides, and has found bromide of zinc (1-4 grains three times daily) to succeed in cases where the other bromides had failed.

In conclusion, we have only to wish this book a continuance of

its well-deserved popularity, and to recommend it to our readers as a work which anyone who has to do with nervous diseases cannot well afford to be without.

The Student's Guide to Medical Case-taking. By FRANCIS WARNER, M.D. Lond.; Assistant-Physician to the East London Hospital for Children. London: J. & A. Churchill. 1881. Pp. 211.

It often happens that observations bearing on the nature and treatment of disease which it would be advisable and important to record are lost, either from the history of individual cases not having been systematically taken, or, if taken, being useless for scientific purposes in consequence of the omission of essential points. In taking notes of medical cases it is not only necessary to know what to observe, and how to observe; but it is also requisite that the reason why special points should be inquired for, and why it is that their absence or presence are to be recorded, should be understood.

To instruct the medical student in this important part of his education, and to guide him at the bedside when wanting to know what to look for and how to note, is the object of Dr. Warner's little book. Its scheme is a good one. Diseases are classed in easily recognisable groups, and the facts indicated as specially to be observed are massed under the ordinary heads of a case on the left-hand page, and on the corresponding right-hand page of the book are given explanations, the characters of the special disease, and its principal causes. By means of a good index and thick type, cross-references, when necessary, are suggested and easily found. It is a book that the student will find of great assistance to him in the wards, and the use of which will make him a better observer and a more careful recorder of disease.

The Student's Guide to Medical Diagnosis. By SAMUEL FENWICK, M.D.; Physician to the London Hospital. Fifth Edition. London: J. & A. Churchill. 1881. Pp. 326.

FLOODED as students' medical literature in this kingdom now is with superficial and often mischievous so-called aids to knowledge, it is satisfactory to see a demand for sound and profitable instruction evidenced by the issue of a revised and enlarged fifth edition of this useful little work. The plan of teaching the science of

diagnosis adopted in it is, it may be remembered, the division of all the diseases of each organ into groups, by fixing upon some well-marked character which is possessed by some in common, but which is wanting in others, and in the same way each group is divided and sub-divided. Thus the diseases of the liver are first grouped into acute and chronic affections; the latter are again separated from each other, according as the organ is enlarged or diminished in size; and the enlargements are further sub-divided into those in which there is, and those in which there is not, either pain or tenderness on pressure. The student is thus led to observe and encouraged to note the differential signs of particular varieties of diseases; and he is assisted in doing so by a description of the different modes of physical diagnosis, and by the numerous drawings and diagrams intercalated through the text.

The chapters on Diseases of the Brain and on Diseases of the Spinal Cord will be found most useful. In the former is a table giving the seat of the lesion in the brain and spinal cord in cases of paralysis, and the corresponding symptoms in each case. The latter chapter has several diagrams (from Roth and Erb) of sections of the spinal cord, clearly showing also the seat of the lesion in its various diseases. Clinical teachers, especially of large classes, would do well to recommend this work to their students, and to follow, in some cases, themselves the mode of teaching it sets forth.

Cyclopædia of the Practice of Medicine. Edited by Dr. H. VON ZIEMSEN. General Index, pp. 499. London: Sampson Low, Marston, Searle, and Rivington. 1881.

THIS General Index to Ziemssen's *Cyclopædia* will be of use, but it does not seem to have been adapted to the English translation, as it frequently refers to Vols. 18 and 19, while the translation has but 17 volumes. Vols. 18 and 19 refer to the two volumes, "Hygiene and Public Health," edited by Buck, which, in the English edition, have been published separate from, but uniform with, the main body (17 vols.) of the *Cyclopædia*. The Index is well printed; and at head of each page the range of the two pages is indicated, which facilitates research. The supplemental volume (844 pp.) does not appear to be included in the General Index; but, as this volume has a very fair index of its own, it is, perhaps, unnecessary.

The Hunterian Oration, delivered at the Royal College of Surgeons in England, 14th Feb., 1881. By LUTHER HOLDEN. London: J. & A. Churchill. Pp. 47. 1881.

THIS Oration is remarkable for its containing a new item of information towards that part of Hunter's history which is the most obscure. The evidence collected by Mr. Holden goes to show that John Hunter had the same schooling and the same moral training as his brothers, William and James, and that he went to Glasgow at the age of seventeen, and entered his name there at the University as a student for the course of Natural Philosophy; so that the current opinion that he had led an idle life up to his twentieth year, when he came to London, appears founded on inaccuracies which one biographer has copied from another.

John Hunter and his Pupils. By Prof. GROSS. Philadelphia, 1881. Pp. 106.

THIS little book is a development of an address delivered by Prof. Gross on the first anniversary of the Philadelphia Academy of Surgery. It is neatly got up, and has as frontispiece a phototype from Sharp's steel engraving of Sir Joshua Reynolds's celebrated painting of Hunter, of which Lavater remarked, "This is the portrait of a man who thinks." Among Hunter's pupils a prominent position is naturally given to James Macartney, Professor of Anatomy in Trinity College, Dublin. Among other sources, the information it contains is derived from the various "Orations" which have been delivered, since 1814, by Fellows of the Royal College of Surgeons.

A Practical Treatise on Nervous Exhaustion (Neurasthenia). By GEORGE M. BEARD, M.D. New York: Wm. Wood & Co. 1880. Pp. 198.

IN a long preface (17 pages), in which the author is anxious to impress the reader with the idea that Erb and Grasset have not done much more than adopt his ideas on the subject, Dr. Beard states that neurasthenia is the Central Africa of medicine—an unexplored territory into which few men enter, and those few have been compelled to bring reports that have been neither credited nor comprehended. Neurasthenia comprises *cerebrasthenia*,

exhaustion of the brain, and *myelasthenia*, exhaustion of the spinal cord. Neurasthenia, according to the author, is a chronic functional disease, a want of nerve-force, a waste of nerve-tissue in excess of repair, with a lack of inhibitory power. The book is an instalment, or advance copy, of a work on "American Nervousness;" and, as far as we can judge, the nervous systems in this country (Ireland) are less prone to Quixotic vagaries than those of the New World appear to be.

On the Mont Dore Cure, and the proper way to use it. By HORACE DOBELL, M.D., &c.; Consulting Physician to the Royal Hospital for Diseases of the Chest, &c. London: J. & A. Churchill. 1881. Pp. 179.

AN ordinary reader, on taking up this book without knowing its author's name, or reading its dedication, might not unnaturally receive a false impression as to its object. This would be more probable if he had received copies of a prospectus of a certain limited liability establishment at Bournemouth, in which it is proposed to carry out "an essentially similar system of treatment for winter cough, catarrh, bronchitis, emphysema, asthma, and other affections of the naso-pulmonary tract, and of the respiratory organs, and for rheumatism, to that known under the name of the 'Mont Dore Cure.'" In the opening paragraph the author magnanimously accepts "the responsibility of introducing the *so-called* Mont Dore Cure into this country"—that is to say, at Bournemouth (where, he informs us, he has a country house), and which is "the most suitable—if not the only completely suitable—place for establishing the Mont Dore arrangement" in England. But Dr. Dobell is particular in stating that he has declined to have any financial connexion with the company, of which he is the originator, and the consulting sanitary officer of which is his "distinguished son-in-law."

The gist of the work appears to consist in the statement that the special factors in the *so-called* cure are not in any way inseparable from Mont Dore, and that in fact they may be more effectually and successfully carried out in the Bournemouth establishment. This remains to be proved. For, although the good results obtained by the Mont Dore Cure in many pulmonary and bronchial affections—asthma, for example—are undoubted, a well-known writer has recently stated emphatically, as the result of his personal

investigation at the spot, that "the Mont Dore Cure is the cure *at Mont Dore* and not elsewhere."^a This authority believes the dry and bracing air of Mont Dore to be an essential part of the cure. Bertrand, who for 52 years was the medical director at Mont Dore and made its reputation, is quoted by Dr. Dobell as also referring to its elevation, and the consequent purity and lightness of the air, as an important factor in the cure. But Dr. Dobell himself considers that "no more than a most transient therapeutical influence" can be due to or expected from the altitude of Mont Dore, as the treatment there is limited to from fifteen to twenty days.

Now Bournemouth, although an admirable health-resort for numerous pulmonary invalids, being sheltered and pleasantly situated among pine-woods, on a sandy soil, is a low-lying seaside place, and has a moderately moist and mild climate. It is well known that such a climate has just as relaxing and debilitating an effect upon some constitutions in fifteen to twenty-one days, as a residence for the same time, or even less, in a locality 3,400 feet above the sea level, such as Mont Dore, would have the contrary effect.

Dr. Dobell does not inform us whether he has ever been at Mont Dore himself, or had personal experience of the details of the methods of cure pursued there; so that his instructions on "the proper way to use it" would seem to be derived from the works of "typical authors"—we presume he means local ones—wearisome translations from whose writings constitute the major portion—over 100 pages—of the book. Then follow 36 pages of selections from Dr. Dobell's former publications on other subjects, the connexion of which with the work before us it is not easy to see. Twenty more pages of a "Descriptive Catalogue of other Works by Dr. Dobell" help in making up the bulk of a volume, hardly half a dozen pages of which can be said not to have been in print, in one form or another, before; and which altogether forms a diffuse and badly-compiled secondhand guide to the real Mont Dore Cure.

Tropical Diseases. By Sir JOSEPH FAYRER, K.C.S.I. London: J. & A. Churchill. 1881. Pp. 404.

THIS volume consists of Lectures and Papers that have, from time to time, been read, or have appeared in the medical journals. The first three lectures, pp. 1-171, on Tropical Dysentery or Chronic Diarrhoea, were the Lettsomian Lectures of 1881. These are

^a Practitioner. July, 1881. P. 7.

followed by Essays on Liver Abscess, Malarial Cachexia, Insolation, Dengue, and other forms of tropical disease. There are also valuable chapters on the Health of European Children in India and on the Rainfall in India, its relation to Climate and influence on Health and Disease. The book carries with it all the weight and authority which attaches to so close and accurate an observer as the President of the Medical Board, India Office.

Manual of the Principles and Practice of Operative Surgery. By STEPHEN SMITH, A.M., M.D.; Surgeon to Bellevue and St. Vincent's Hospitals, New York. London: Sampson Low & Co., 188, Fleet-street.

THE Americans are determined to carry the principles of competition into every department of production. They are not content to provide for their home wants, but they are ambitious to send their wares across the sea, and to test their excellence against similar things in the old country. Not only do they supply us with beef and iron, but with pills and books, "pushed" with all the lavish energy that characterises everything they undertake. There is no field in which they have shown more industry and enterprise than in medical literature. There is a thoroughness about their work altogether Germanic, and we are bound to say that at home the great body of those who write to instruct the profession might in many respects copy with great advantage the model which our cousins set us. No other country has produced, if it could, such splendid monuments of organisation as the "Medical and Surgical History of the War," and Walker's magnificent "Statistical Atlas," based upon the census of 1870. Of the text-book compilers there is a host, among whom Agnew, Wood, and Flint are prominent, whose writings are not only known but highly appreciated here; and we believe that the volume now before us will meet with a success as great as any of its more elaborate predecessors. Dr. Smith has produced a book which has not its precise equivalent in our home literature, and for that reason alone it will be welcomed not only by the surgeon but by the student.

The book is divided into ten chapters, under such headings as the osseous, the muscular, the nervous, the tegumentary systems; the respiratory, the urinary, the generative, and the digestive organs. The peculiar affections which belong to these are shortly described, and then the operative measures which have been recom-

mended for their remedy are given in detail. The type is of two sizes. In the larger text the recognised principles of practice are set out, with full references to the authorities, while in the smaller the "opinions, and, as far as possible, the language, of writers have been incorporated." The illustrations are a very noticeable feature. They amount to nearly 750, and although many of them are very small and sketchy, they are most helpful. Many instruments are also figured, with the names of the inventors appended. The methods of putting up fracture, and all kinds of minor surgical operations, are included. The book is altogether one of the very best manuals we know of.

Justus von Liebig ; his merits in the promotion of Practical Medicine. A Memorial Address, delivered at the Annual Public Meeting of the Society for the Advancement of the Natural Sciences, in Marburg, on 11th June, 1874. By Prof. Dr. F. W. BENEKE. Glasgow: James Maclehose. 1881. Pp. 37.

ALTHOUGH so long a time has elapsed since its delivery, the translator thinks that by giving this address to English readers he will contribute to the better recognition of the great services rendered by Liebig to medical science, and direct more just attention to the great fundamental principles he established.

In the address Professor Beneke commences by pointing out that Liebig was not one of those who enrich science by the discovery of isolated facts, but that he belongs to those few men who revolutionised whole regions of previous belief, more by comprehensive ideas, harmoniously developed, and having in themselves the irrefragable stamp of truth, than by the discovery of single facts. What Newton was in the region of Natural Philosophy, Liebig was in the region of Biology.

The points specially dwelt on, as those in which practical medicine is most indebted to Liebig, are—first, for the conception of the circulation of matter; secondly, for having shown the importance of the inorganic constituents of the food and bodies of plants and animals; thirdly, for having pointed out the necessity of a definite proportion between the nitrogenous and non-nitrogenous organic constituents of food, and the difference in nutritive value of carbo-hydrates and fats; fourthly, for his valuable discoveries in quantitative analysis, more particularly as applied to the constituents of the urine and the other products of

the metabolism of the body; and, finally, for his important contributions to sanitary science and preventive medicine, as well as his far-reaching views on the fundamental relation of chemistry to biology and medicine. The author regrets that even still so little regard is paid to Liebig's teaching by practical physicians—more particularly in the regulation of diet, not only for those who are ill but for those who are well, so that they may ward off constitutional diseases.

This address will well repay perusal.

How to Use the Forceps. With an Introductory Account of the Female Pelvis and of the Mechanism of Delivery. By HENRY G. LANDIS, A.M., M.D., Professor of Obstetrics in Starling Medical College. Illustrated. New York: E. B. Treat. 1881.

ALTHOUGH the obstetric forceps has now been in use for upwards of two centuries, and though many and great advances have been made in its use, yet, as our author justly remarks, "the great diversity in the shape and design of forceps now in use, and the vague and conflicting opinions as to the manner of their employment, are a sufficient evidence that an exact and scientific basis has not yet been reached, or, if known at all, that it has not yet been well and generally understood." A study of the mechanism of labour *de novo* will be, then, the first requisite for a proper understanding of any artificial aid intended to assist or replace that mechanism. Accordingly, the first part of the book is devoted to the consideration of the anatomy of the pelvis, the propelling forces, the body to be propelled, and the mechanism of labour.

The pelvis is described as a structure designed for other purposes, but specially modified as a parturient canal, consisting indeed of two canals partially separate at the beginning, but identical at their termination. These canals converge from above downwards, and are also mutually curved from before backwards. Their direction is, therefore, somewhat spiral. The calibre of each is that of the fœtal head; therefore, the head may descend in either canal, and will follow a spiral course in so doing.

It is denied that the various parts of the line bounding the superior strait are on the same plane. As a matter of fact, the circumference of the inlet bounds two distinct planes whose inclination to each other is 150° .

In the second part the forceps—that is, the Davis forceps, pro-

vided with the button lock—is very minutely described. The author would not undertake the invidious task of pointing out the imperfections of the various instruments now in use. “There is no doubt,” he says, “that special skill in the use of any double-curved forceps may enable an operator to use it effectively; the same amount of skill devoted to the Davis forceps will bring a better return. The straight forceps is nearly obsolete, though the English have shown a tendency to prolong the infancy of the instrument in a characteristic way;” and Tarnier’s instrument is unnecessarily ingenious.

The method of using the instrument recommended by Dr. Landis is as follows:—The patient is placed upon her back, transversely in the bed, with her feet on chairs. The use of anæsthetics is neither necessary nor advisable, the sensations of the woman being an invaluable guide and safeguard. The blades of the forceps having been applied to the sides of the head, which is supposed to be at the inlet of the pelvis, “the handles are seized by the right hand from above, and held firmly, compressing the head as little as possible at first. The left hand is placed so that the ball of the thumb comes over the lock, while the index finger rests upon the upper arm of one blade, and the middle finger on the other. Now, while the right hand holds the handles almost at rest, the fingers of the left push upon the blades, so as to move them and the contained head downwards and backwards, and a little to the left of the median line. Secondly, while the fingers are pushing downwards in this way, we may also make use of them as a fulcrum, and by elevating the handles, cause the blades to move in an opposite manner; but care must be taken that the force thus applied by the right hand is not enough to overbalance the downward pressure of the left, else we shall merely extend the head without propelling it. It is sometimes convenient to vary the position of the left hand and fingers, but the principle is the same—that pushing, and not pulling, is the first step in traction.”

Although we do not intend to enter upon a criticism either of the Davis forceps or of the method of using them above described, yet there are some statements made by Prof. Landis in this connexion which we cannot allow to pass unchallenged.

On pages 122 and 123, having made a few quotations from the works of Cazeau, Leishman, Playfair, and Hodge, to show that the ordinary method of employing traction is to pull on the *handles* of the forceps as nearly as possible in the axis of the

pelvis, he adds, "so on through obstetric literature." Now, the method recommended by Osiander was not only different from this, but was essentially the same as that described by Prof. Landis. It was to make pressure downwards with the right hand upon the neighbourhood of the lock, whilst the handles were elevated by the left hand, using the right as a fulcrum, "*Fixo pede et perpendicularis brachii nisu validissimo deorsum premere.*" It was described also by Hermann, in the year 1844, as the best method known up to that time. It was commented on also, but condemned as dangerous, by Braun, of Vienna. Yet Dr. Landis says (p. 124) that there is no written direction for seeking to prevent the anterior pressure of the forceps by placing one hand on the lock and using it as a fulcrum, around which rotation is affected.

On page 127 we are told that amongst the first to have a "practicable doubt" as to the possibility of making traction upon the handles in the proper direction was Tarnier. Now, we are not very sure as to the meaning of a *practicable doubt*, but we are certain that Tarnier was not amongst the first who endeavoured to deflect the force in a proper direction.

We think this little book is worth the trouble of perusal. It is, on the whole, well and carefully written, and though its precepts on most points are different from those found in our own text-books, yet it is, no doubt, well occasionally to hear the other side of a disputed point.

A Treatise on Foreign Bodies in Surgical Practice. By ALFRED POULET, M.D.; Adjutant Surgeon-Major; Inspector of the School for Military Medicine at Val de Grâce. 2 Vols. New York: Wm. Wood & Co., 27, Great Jones-street. 1881.

THESE volumes are part of a new medical library which is being issued by the publishers. They are very curious and very interesting. The author has, as he says, "undertaken a work which has no analogue in our classical literature." The book is arranged upon the plan of taking up the different cavities of the body in which foreign bodies have become lodged, such as the pharynx, œsophagus, stomach, bladder, rectum. Then the symptoms and treatment are described, with numerous cases in illustration of the particular branch of the subject. The instruments which have been devised for the purpose of removing the offending substances

are depicted. The perusal of many of the cases will excite the interest and astonishment of the surgeon. The author has done his work very well indeed, but we think the publishers might have been more generous regarding the quality of the paper. The effort to be economical has been made at the expense of appearances. The pages are far too crowded; and in these days of good typography, attention to the external attractiveness of a book does not go for nothing.

The Student's Guide to the Diseases of Women. By ALFRED L. GALABIN, M.D., F.R.C.S., &c. Second Edition. London: J. & A. Churchill. 1881.

OF books on diseases peculiar to women there seems to be no end. Yet we welcome a new edition of Dr. Galabin's excellent little manual, which has proved a trusty "Guide" both to students and practitioners. The second edition is in many respects an improvement upon the first. The paper, printing, and illustrations, are all better. Much of the contents has been carefully revised, and in some places new matter added. In the section on exploration of the bladder, Bryant's urethral speculum is recommended instead of Weiss' three-bladed dilator, or Simons' graduated bougies. Emmet's operation for ectropion of the cervix is given more in detail, and is illustrated by a good diagram, and his method of removing intramural fibroids has been introduced. The symptoms accompanying chronic metritis and endometritis, as well as the histology of cancer of the cervix, are more fully described. Seven new illustrations have been added, and thirteen of the old ones replaced by new engravings.

1. *A Clinical Contribution to the Study of Post-paralytic Chorea.*
2. *A Contribution to the Study of Localised Cerebral Lesions.* By C. E. SEGUIN, M.D.

THESE papers are reprints from the "Transactions of the American Neurological Association," Vol. II., 1877. In the first paper two cases of choreiform movements in partially paralysed limbs are recorded. In each instance there was considerable impairment of sensation in the affected parts, and in the second case hemiopia of both eyes—the temporal half (or nearly so) of the right eye, and the nasal half of the left being blind. This is of interest as

contradicting Charcot's statement that hemiopia is never caused by a lesion of the hemisphere which does not involve the optic tracts. However, as in neither of Dr. Seguin's cases was a *post mortem* examination made, the exact seat of the lesion is only a matter of conjecture.

The second paper is divided into three parts. The first gives details of cases of aphasia, caused by localised lesion of the brain; the second consists of one case in which localised lesion of the left ascending frontal convolution caused hemiplegia, without aphasia; and the third recounts numerous cases in which localised cerebral lesions gave rise to localised convulsions, or spasm. With one exception, in which, although an extensive destruction by softening had involved almost the entire motor area of one hemisphere, the paralysis was only temporary, all the cases support the theory of cerebral localisation. The exact positions in the cortex, however, assigned by the author to the so-called centres differ somewhat from those given by Ferrier. The paper—which is well illustrated by drawings showing the exact position of the lesion in each case—is a valuable contribution to neurology.

Low's Library of Standard Medical Authors. Thirteen volumes.
London: Sampson Low, Marston, Searle, and Rivington. 1881.
8vo.

ACTUATED by a spirit of enterprise which is worthy of all praise, the well-known publishing firm of Low and Company have within the past few months issued a library series of standard medical and surgical authors in thirteen volumes. The following are the works included in the series:—"Diseases of the Nervous System," by M. Rosenthal, translated by L. Putzel, M.D. (two volumes); "The Diagnosis and Treatment of Ear Diseases," by Albert H. Buck, M.D.; "Foreign Bodies in Surgical Practice," by Alfred Poulet, M.D. (two volumes); "The Venereal Diseases," by E. L. Keyes, A.M., M.D.; "Treatise on Therapeutics," by A. Trousseau and H. Pidoux, translated by D. F. Lincoln, M.D. (Ninth Edition, three volumes); "A Treatise on the Materia Medica and Therapeutics of the Skin," by Henry G. Piffard, A.M., M.D.; "Minor Surgical Gynecology," by Paul F. Mundé, M.D.; "The Principles and Practice of Operative Surgery," by Stephen Smith, A.M., M.D.; "A Treatise on the Continued Fevers," by James C. Wilson, M.D.

As several of these works have been already noticed in these pages, and as others will shortly be reviewed, we have at present only to draw attention to this series of excellent text-books and to congratulate the publishers on the rapidity with which the volumes have been brought out and the excellence of the workmanship bestowed upon them.

Diseases of Women. A Manual for Students and Practitioners.

By ARTHUR W. EDIS, M.D. Lond., F.R.C.P., &c.; Assistant Obstetric Physician to the Middlesex Hospital. London: Smith, Elder, & Co. 1881. 8vo. Pp. 541.

DR. EDIS has added another most useful and highly practical volume to the literature of gynæcology. The rapid advance of gynæcological therapeutics within the past few years has brought into competition several new text-books, and we know of no department of medical literature better represented, both for practitioners and students, than the obstetric. The works of Schroeder, Barnes, Thomas, Goodell, Wells, Duncan, and many American and Continental authorities, leave nothing to be desired. Nevertheless, as a condensed summary of practical gynæcology, and the recent additions to the science of this branch of the obstetric art, we know of no better volume that can be placed in the hand of the student, for whom it is specially written, than this work of Dr. Edis. The extensive field over which the student of gynæcology must travel in order to fit himself to carry out in practice its modern teaching, is not justly regarded by those who arrange for the training, both theoretical and practical, of the schools. The loss to obstetricians in this respect will be great, indeed, from the absence from his place on the General Medical Council of one whose voice was certain to command attention and respect—the late Dr. McClintock. His views on the subject were well known, and obstetricians generally looked forward to receiving, at last, some attention to the frequently repeated protestations of obstetric lecturers throughout the United Kingdom. Condensed as Dr. Edis's work is, it reaches to 528 pages of text, and we fail to detect in it the slightest attempt at book-making. It has the first essential of success in any student's manual—a complete absence of dogmatic individual expression of opinion on the part of its author, while it conveys in the clearest language the accepted teachings of the recognised authorities, both British and foreign. Such a work cannot fail to be equally

attractive to the busy practitioner, and from the same point of view, for he requires not individual bias or prejudice in the therapeutical advice or hints he receives, but, as Dr. Edis himself well remarks, that alone which "has stood the test of time and experience." Therefore it is that we find as we glance through its pages the views of such authors as Barnes, Marion Sims, Goodell, Gaillard Thomas, and Spencer Wells, in so far as they affect the every-day practice of the surgeon or the requirements of the student, done complete justice to, while there is a conspicuous absence of that wearisome repetition and multiplication of the names and views of authorities, which makes some works rather biographical summaries than practical treatises. It would not be possible, as it would be undesirable, to enter into any critical analysis of such a work. The first hundred pages are devoted to the consideration of diagnosis and uterine displacements and their rectification. Dr. Edis need not plead guilty to the impeachment of exhibiting a partiality or preference for any one form of support or pessary, inasmuch as he gives with perfect diagrams all the most improved forms of pessary that have, from time to time, been suggested.

There is a separate, short, but admirable, chapter on inversion of the uterus, with diagrams and tabular statements of the means of diagnosis from uterine polypus and fibroid tumour.

The second hundred pages are devoted to vascular disorders of the uterus, inflammatory affections generally, sub-involution and hyperplastic and degenerative changes, new growths, polypi, fibroids, fibro-cysts; and, terminating this portion of the work, is a special chapter on cancer of the uterus.

Dr. Edis gives accurately the views of Simpson, Emmet, and Thomas, on laceration of the cervix. We fully agree with the author that the operation of "tracheloraphy should never be undertaken until palliative treatment has been first tried." It does not appear that British obstetricians have the same necessity for the adoption of measures to cure laceration of the cervix uteri that appears to demand the resort to them at the hands of our American *confrères*.

The next hundred pages are occupied with affections of the ovaries and broad ligaments, which are dealt with in five chapters, including diseases of the ovaries, ovarian tumours, diagnosis of abdominal tumours, surgical treatment of ovarian tumours, diseases of the broad ligaments, including pelvic cellulitis and pelvic peri-

tonitis. We cannot too highly commend, as the best summary we have ever read, this portion of Dr. Edis' book. There are several complete tables for enabling the practitioner to differentiate the various form of abdominal tumour. To the student and practitioner alike this is one of the most valuable sub-divisions of the book, and will especially enhance its charm in the hands of the former class. Pelvic hæmatocele, diseases of the Fallopian tubes, vulva and vagina, find their place in the next hundred pages, which are capped by two admirable chapters on laceration of the perinæum and fistulæ of the female genital organs. The last hundred pages are devoted to "functional disorders," including all the deviations from the normal menstrual act, sterility, climacteric disorders, hysteria, dyspareunia, and vesical disturbances; the book closing with a chapter on pruritus of the genital organs, uterine dyskinesia, and coccyodynia.

There are one hundred and forty-eight beautifully executed engravings. We miss here, however, reference to several appliances of Dr. Matthews Duncan, such as those for intra-uterine medication, as also a most necessary and useful instrument—Dr. Marion Sims' knife—which we consider far safer and preferable to any form of metrotome for incision of the cervix. The entire book is beautifully put out of hands, and is wonderfully cheap. Taking it all in all we know of no treatise on the subject that we would prefer to place in the hands of a student as a class book to this manual by Dr. Edis.

H. M. J.

Investigations into the Etiology of Traumatic Infective Diseases.

By DR. ROBERT KOCH. Translated by W. WATSON CHEYNE, F.R.C.S. London: The New Sydenham Society. 1880.

MR. WATSON CHEYNE has favoured us with an excellent and fluent translation of the laborious investigations of Dr. Koch on a subject of the deepest practical interest, and one surrounded by immense difficulties. The object of the inquiry was to determine whether the infective diseases of wounds (*e.g.*, septicæmia, pyæmia, erysipelas) are of parasitic origin or not; and Dr. Koch believes that he has solved the problem in the affirmative so far as is possible by experiments on animals alone. As we all know, the terms pyæmia and septicæmia no longer retain their original signification, and remain now only as collective names for a number of symptoms

which in all probability belong to different diseases. But for the present we may include under the term septicæmia "all those cases of general traumatic infection in which no metastatic deposits occur, and under pyæmia those in the course of which they may be present."

Koch describes a beautiful method of staining and illuminating specimens which clearly brings to light organisms not visible by less refined means. At the recent meeting of the International Medical Congress Dr. Koch gave demonstrations of his methods and results at King's College, having gone to the trouble and expense of bringing over his apparatus and assistants from Berlin in order that those interested might see and judge for themselves of the reality of the facts recorded.

Dr. Koch's researches mark a distinct advance in our knowledge of this intricate subject, and are calculated to throw great light upon some of the most urgent problems in clinical medicine and surgery.

TEMPORARY RESECTION OF THE OLECRANON FOR FACILITATING OPERATIONS ON THE ELBOW JOINT.

TRENDELENBURG first performed the operation in 1878, and a second time in 1879, and both cases were published in the *Arch. f. klin. Chir.*, 1879, Bd. xxiv., Hft. 4. One month later, Völker described the same operation, in the *Dtsch. Ztschr. f. Chir.*, 1880, Bd. xii., Hft. 6, though there were some minor differences in the manner of its performance. Trendelenburg proposed the operation for the purpose of facilitating partial resection of the elbow joint in other cases than those of caries. Völker performed it in a case of complete luxation of the joint outward, and recommended it for the partial resection of the joint in traumatic cases. The operation now reported by Trendelenburg was for a complete dislocation of both bones of the forearm backward. He recommends that the incision through the skin and that through the capsule of the joint should not be on the same level, but that the former should be far enough away from the latter to leave a flap of integument as a covering, and give the latter the character of a subcutaneous wound. In this way the two wounds will approximate each other only in the region of the epicondyle, and at this point the drainage tube may be inserted. The olecranon is best divided with a sharp chisel.—*Centralbl. f. Chir.*, Dec. 25, 1880, and *N. Y. Med. Jour.*, May, 1881.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.^a

By WALTER G. SMITH, M.D., Dublin; F.K.Q.C.P.I.; King's Professor of Materia Medica, School of Physic, Trin. Coll. Dub.; Physician to Sir P. Dun's Hospital.

ART. 3. Boracic Acid.

- „ 1. Mercury.
- „ 4. Molecular Relations.
- „ 6. Morphia and Codeia.
- „ 2. Pilocarpin.
- „ 5. Thymol and Carbolic Acid.

1. *Mercury*—(a.) *Elimination in Urine*.—Oberländer arrives at the following conclusions, based upon a considerable number of analyses:—

(1.) The normal elimination of mercury through the urine may be determined so long as 190 days after the cessation of specific treatment. Its course is irregular, and is marked by exacerbations, remissions, and even by temporary pauses of variable duration.

(2.) Increase in the nutritive exchanges of the body, artificially induced, may exaggerate or provoke elimination of mercury by the urine, but not constantly or of necessity. A favourable influence of sulphureous waters internally, of chlorinated, alkaline, or vapour baths, remains to be proved.

(3.) It is uncertain whether, in the cases in which the reappearance of mercury in the urine coincides with an increase in the nutritive exchanges, there be a relation of cause and effect between

^a The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

these two phenomena.—(*Rép. de Pharm.*, Août, 1881, from *Viertel-jrsch. f. Dermat. u. Syph.*)

(b.) *Absorption and Action of Mercury in Neapolitan Ointment*.—Fürbinger proposed to solve by experimentation the following questions:—

(1.) Does the metallic mercury in the ointment penetrate, in the free state, into the organism?

(2.) Is the metal oxidised or rendered soluble by contact with the animal fluids?

The first query has received affirmative and negative answers at the hands of various experimenters. The second has hitherto been discussed only by chemists.

As the result of his experiments the author has arrived at the following conclusions. Treatment by mercurial frictions (the ointment being recently prepared and free from oxide, and the skin and mucous membranes being in the normal condition) acts in the following manner:—

(1.) Metallic globules are directly introduced by friction, at the seat of application, into the sebaceous and hair-follicles of the skin, where they are transformed under the influence of the glandular secretions into a soluble combination capable of being absorbed.

(2.) Mercurial vapours, when inspired, are deposited in the metallic state on the mucous membrane, and then form a soluble and absorbable product of oxidation.

When the skin or mucous membrane is injured new factors come into play.

(3.) Metallic mercury may enter the circulation directly at the point of friction, when the surface of the skin is bleeding. As soon as the metal comes in contact with living blood a soluble and active combination is formed.

(4.) The same thing occurs when, through a breach of continuity of a mucous membrane, mercurial vapours can gain direct access to the blood.

(5.) For a similar reason mercurial vapour which has been deposited in the metallic state upon the skin may become active as soon as its oxidised and soluble products come into contact with portions of skin deprived of epidermis.—(*Rép. de Pharm.*, Août, 1881, from *Archiv. f. pathol. Anat. u. Phys.*)

[The researches of Neumann, which agree generally with those of Fürbinger, were noticed in the Report on *Materia Medica*, Feb., 1872.]

2. *Pilocarpin in Scarlatinal Nephritis*.—Dr. Seemann gives the following indications for the use of pilocarpin in certain cases of nephritis:—

(1.) Muriate of pilocarpin is useful in cases of scarlatinal nephritis, and may often save life when other remedies fail; but it must not be resorted to except in very serious cases.

(2.) When, after its successful administration, the œdema begins to lessen, cure should be left to nature and to other remedies, because renewed doses of pilocarpin may cause too rapid absorption of the transudation, and may thus lead to uræmia.

(3.) After each dose of pilocarpin, the state of the respiratory organs must be carefully watched; if the bronchial mucus be not satisfactorily expectorated, or if the slightest indication of pneumonia show itself, further doses of the drug must not be given.—(*Med. and Surg. Rep.*, May, 1881.)

3. *Boracic Acid*—(a.) *Elimination by the Urine*.—From experiments carried out upon himself, M. Domergue finds that boric acid, taken internally in doses of 1–2 grm. a day, is eliminated in the urine within from twenty-four to thirty hours. The greater part is eliminated at the end of about twelve hours. The detection of boric acid in urine is effected by evaporating the urine to dryness, calcining the residue, and exhausting with sulphuric acid and alcohol. The alcohol flame will be bordered with green. The variations in the quantity of boric acid eliminated can be easily followed by dipping turmeric paper into the urine acidulated with hydrochloric acid, the depth of coloration of the turmeric being proportionate to the quantity of boric acid.—(*Rép. de Pharm.*, Juillet, 1881.)

(b.) *In Vesical Catarrh*.—Prof. Rosenthal, of Vienna (*Wiener med. Blätter*), has derived decided benefit from boracic acid in various forms of catarrh of the bladder.

R.—Boracic acid, pure,	-	-	1 part.
Warm water,	-	-	20 parts.
Hot glycerine,	-	-	5 parts. M.

This mixture will keep well for months, and may be given in teaspoonful doses once or oftener daily in a glass of water.—(*Med. and Surg. Rep.*, July, 1881.)

4. *Molecular Properties in relation to Physiological Action*.—The researches of Dr. James Blake were begun with the intention of

applying the simpler and better known inorganic substances to the analysis of physiological facts, but in the course of his experiments it became clear that living matter might serve as a means for giving a clue to the molecular principles of inorganic matter. In a discourse delivered in 1839 before the Academy of Sciences of Paris, he showed that when solutions of different salts are introduced into the blood of living animals the physiological action depends on the electro-positive component of the salt, and little upon the acid with which it is combined. A communication read at a meeting of the Royal Society in June, 1841, proved that the action of inorganic bodies introduced directly into the blood of living animals depends on their isomorphous relations; and in a memoir communicated to the California Academy of Sciences in 1873, Dr. Blake showed that among the compounds of the metallic bodies, strictly speaking, the physiological efficacy of substances belonging to one and the same isomorphous group was proportionate to their atomic weight; the greater the atomic weight the more intense the physiological action. This is not the place to enter closely into the physiological action of the bodies employed in these experiments. They included salts of forty-one elements, and their action was tested upon horses, dogs, cats, rabbits, geese, and hens with identical results. Aqueous solutions of the different salts were injected into the blood-vessels of the living animals. Among those of the monatomic metals were salts of lithium, sodium, rubidium, thallium, and silver. They all agree exactly in their physiological action. The fatal quantity of lithium sulphate for a rabbit is 1 grm. per kilo. of the animal's weight; whilst of silver nitrate, 0.06 grm. was fatal. Among the diatomic metals tried were salts of magnesium, iron, manganese, cobalt, nickel, copper, zinc, and cadmium, as also calcium, strontium, and barium. In the salts of the magnesium series, the analogy of physiological action is very manifest, and their activity is enhanced with the increase of the atomic weight, rising from 0.97 gram per kilo. for magnesium sulphate to 0.08 gram for cadmium sulphate. The salts of calcium, strontium, and barium form likewise a group in which the increasing physiological action is very distinct, being 0.47 per kilo. in calcium chloride and 0.043 gram per kilo. for barium chloride. The physiological reactions of the lead salts resemble those of the barium group, though agreeing in certain reactions with the salts of silver. (Similar transition-reactions were observed in the salts of magnesium, calcium, silver, and gold.)

Among the tetratomic metals, the salts of thorium, palladium, platinum, and osmium, were examined. All showed great similarity in their physiological action.

Among the hexatomic metals, the salts of glucinum, aluminium, and iron (ferricum) agree perfectly in their physiological reactions. The fatal dose per kilo. ranges from 0.323 in glucinum, 0.007 for aluminium, and 0.004 gram in ferricum, all in the state of sulphates. The physiological action of glucinum confirms the view that glucinum is a hexatomic metal.

Among the rarer earths, experiments were tried with ytterbium, cerium, didymium, lanthanum, and erbium. There was found a marked difference between the cerous and ceric salts as in those of iron. The difference is, however, less, being 1 : 3 in cerium and 1 : 28 in iron. Among the non-metallic elements, compounds of chlorine, bromine, iodine, phosphorus, arsenic, antimony, sulphur, and selenium were examined. Chlorine, bromine, and iodine agree closely in their physiological reaction, but instead of an increase there is here a decrease of intensity. Phosphorus, arsenic and antimony do not induce any immediately perceptible physiological reaction. Arsenious acid, injected in the proportion of 0.560 gram per kilo., checks the pulmonary circulation. Sulphur and selenium are similar in their action, the latter being the more powerful. The only exceptions to the rule, that isomorphous substances act in an analogous manner, are the salts of potassium and ammonium. The latter produce results resembling those of certain nitrogenous alkaloids. If the carbon compounds exhibit similar phenomena in their manner of action upon the living and animal body, researches concerning molecular relations will be greatly facilitated. Dujardin has already demonstrated in this direction, that in alcohols of one and the same series the intensity of the physiological action is directly as the atomic weight.—(*Pharm. Journ.*, June 11, 1881.)

[In the Reports on Materia Medica for February, 1870, and August, 1871, some account was given of Rabuteau's investigations upon similar lines, and of Broadbent's ingenious and suggestive "attempt to apply chemical principles in explanation of the action of remedies and poisons."]

5. *Thymol and Carbolic Acid*.—Mr. Edward Hirschsohn, of Dorpat, remarks that it often becomes a question how definitely to determine the pressure of thymol in aqueous solutions, and he has instituted a series of experiments the final results of which are

deserving of reproduction. In these experiments he used a solution of thymol prepared in the following manner:—One part of commercial thymol was put into a stoppered bottle with 1,000 parts of water at 60° to 70° C., shaken until completely dissolved, and cooled. The solution of carbolic acid, also in water, was of the same strength.

(1.) *Millon's Reagent*.^a—2 drops of the reagent were added to 5 c.c. of the solutions, and the whole heated to the boiling point. From these experiments it results that Millon's reagent gives with thymol only a pale coloration, and in a dilute solution of 1 to 16,000 the reaction is very weak, whilst carbolic acid, according to Almén, can be recognised even in a dilute solution of 1 to 2,000,000.

(2.) *Hypochlorite of Lime and Ammonia*.—To 5 c.c. of solution 4 drops of ammonia were added, and then 1 drop of a chloride of lime solution (1 to 3), and the whole warmed.

This series of experiments showed that thymol with chloride of lime and ammonia shows no colour, like that of carbolic acid, but that thymol solutions are precipitated by chloride of lime.

(3.) *Chlorinated Soda*.—The solution was obtained by mixing 1 part of chloride of lime, 20 parts of water, and 1 part of carbonate of soda. 5 drops of this solution were added to 5 c.c. of the solution under examination.

Experiment shows that chlorinated soda can be used to distinguish thymol from carbolic acid; but an excess of the reagent must be avoided, as in this case carbolic acid causes a precipitate, which, with a greater addition of chlorinated soda, is dissolved, but at the same time the thymol precipitate dissolves.

Chlorine water can be used in the same manner as chlorinated soda to distinguish thymol from carbolic acid, but an excess of the reagent must be avoided.

(4.) *Bromine Water*.—This reagent shows towards thymol the same behaviour as towards carbolic acid, but the sensitiveness is greater, as in a solution of 1 to 60,000 a turbidity occurs, whilst with carbolic acid, according to Almén such a result was not obtained until after twenty-four hours.

(5.) *Chloride of Gold*.—Used in the dilution in which it is usually employed as a reagent, and 1 drop was added to 5 c.c. of thymol or carbolic acid solution.

The property of thymol immediately to reduce gold in aqueous solutions can be used as a means of recognising thymol in the

^a Neubauer und Vogel. *Analyse des Harns*. Wiesbaden, 1876. P. 70.

presence of carbolic acid, as the latter only reduces chloride of gold after a long time. In a solution of 1 to 20 reduction does not take place in three minutes. Mixtures of equal parts 1 to 1,000 of carbolic acid with 1 to 2,000 of thymol gave reactions; also 1 to 1,000 of carbolic acid with 1 to 5,000 of thymol gave a useful reaction; while 1 to 1,000 carbolic acid with 1 to 10,000 thymol gave no decided reaction.

(6.) *Chloride of Platinum*.—This reagent was employed in the same proportion as the chloride of gold, only after the addition of chloride of platinum the mixture was heated to boiling, as while cold no reaction occurred.

a. Experiments with Thymol:—

1 to 1,000 and 1 to 2,000 : cloudy and opaque.

1 to 4,000 and 1 to 8,000 : cloudy and transparent.

1 to 16,000 and 1 to 32,000 became opalescent, and a faint opalescence was visible in a dilution of 1 to 64,000.

b. Experiments with Carbolic Acid:—

All degrees of dilution remained clear after boiling and long standing, but in the proportion of 1 to 1,000 an opalescence was after some time visible.

The results obtained with chloride of platinum must be presumed to be better for the recognition of thymol than others previously named, and the reagent is also useful to detect thymol in the presence of carbolic acid, whilst concentrated carbolic acid, 1 in 20, for instance, gives no reaction. It is possible to recognise thymol in mixtures of 1 to 20,000.—(*Pharm. Journ.*, 9th July, 1881.)

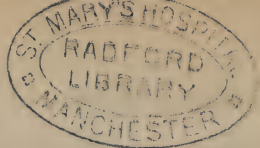
6. *Morphia and Codeia*.—The marked progress which has been made recently in the investigation of the alkaloids will receive a fresh impulse from the contribution that M. Grimaux has just made (*Comptes Rendus*, xcii., 1140) to the history of one of the most important of them—namely, morphia. This chemist was led by a consideration of the reactions and properties of morphia to the conclusion that it is a body with complex functions approaching the phenols in its characters, in which case codeia, differing from it in composition by CH_2 , might be considered as its methylic ether. To test this the transformation of morphia into codeia was attempted by heating gently a mixture consisting of 1 mol. of morphia dissolved in alcohol containing 1 mol. of soda and 2 mol. of iodide of methyl. The operation was so far successful that a considerable quantity of iodomethylate of codeine was formed, identical with the

addition product of codeine and iodide of methyl, together with a smaller quantity of "iodomethylate of morphia-soda." When, however, half the proportion of iodide of methyl was used a small yield of free codeine was obtained (the principal product being the morphia-soda compound), which was dissolved out with ether, and, after purification by conversion into hydrochlorate and decomposition by a salt of potash, presented all the characters of codeia extracted from opium. In operating with iodide of ethyl a new base was obtained, homologous with codeine, which may be considered to be the ethylic ether of morphia, as codeia is the methylic ether. M. Grimaux is of opinion that by analogous treatment morphia may be made to yield a series of new bases as numerous as the series of ethers of an alcohol. To such a series he proposes to give the generic name of "codeines," whilst systematically codeine itself would be called "codomethylene;" the new base already prepared would be "codoethylene," and others accordingly. Some physiological experiments which have been made with the new base show that it acts as a *convulsant*, and is toxic in small doses.

As an illustration of the closeness with which the chemical preserve is now being beaten, it may be mentioned that a month before the reading of M. Grimaux's paper, M. Chastaing had called the attention of the Société d'Émulation pour les Sciences Pharmaceutiques to the complex functions of morphia, and pointed out that whilst in some respects it had the properties of an alkali, in others it presented those of an acid or a phenol. At a subsequent meeting, but still previous to the date of M. Grimaux's paper, M. Chastaing had stated definitely that morphia is a phenol, and had given the formulæ of a crystalline morphinate of potash and a double salt of morphinate and carbonate of potash. M. Chastaing's researches, however, do not appear to have been printed until the present month.—(*Répertoire de Pharmacie*, June; *Pharm. Journ.*, June 25.)

PEPTONISED AMMONIATED MERCURY IN THE TREATMENT OF SYPHILIS.

M. MARTINEAU communicated to a recent meeting of the Société Méd. des Hôpitaux, the results obtained by him in the Lourcine by the subcutaneous injections of the above substance, for the preparation of which he gives a formula in the treatment of syphilis. He has treated by this method 172 patients, and claims that it has a great superiority over all other modes of treatment.—*Gaz. Méd. de Paris*, No. 43.



PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, November 16, 1881.

J. W. MOORE, M.D., Vice-President, in the Chair.

Cirrhosis and Hæmorrhagic Infarction of Liver.—DR. QUINLAN exhibited the liver of a patient who died in St. Vincent's Hospital on Monday, the 14th. The patient was a light-weight steeplechase rider, aged forty-four years. He was of most temperate habits. About two years ago he got a very severe fall at the Cork Park races, which was followed by an attack of what he (Dr. Quinlan) inferred to be inflammation of the liver. He died from intestinal hæmorrhage. On examination of his body, the "hob-nailed" liver now shown was found. Its weight was only 2 lbs. 2 ozs., and it presented the "hob-nailed" surface and peculiar mixture of fatty appearance and congestion delineated in the "Atlas of Pathology" now being issued by the New Sydenham Society. There were no signs of syphilis, cardiac disease, or albuminuria. The case shown in the "Atlas" was stated to have arisen from mitral valve disease; but he believed the present liver was the result of the great fall the deceased got at Cork Park races, together with many others that he had sustained in the pursuit of his profession. The patient was very severely jaundiced.

A Case of Stenosis of the Pulmonary Valves. By J. W. MOORE, M.D.,
Dubl.; Vice-President and Fellow, King and Queen's College of
Physicians; Physician to the Meath Hospital.

CONSTRICION of the pulmonary orifice is a sufficiently rare lesion to warrant me in exhibiting a specimen to the Medical Society, and sub-

mitting the following brief clinical history, for many of the notes included in which I am indebted to Mr. John FitzGerald, who took charge of the patient.

On the 30th of March, 1881, Jane O'K., aged fifteen years, a delicate and sickly girl, was admitted to the Smyly Ward of the Meath Hospital, under my care. She had been ailing for six weeks, and attributed her illness to a wetting, after which she caught cold. Her chief complaint was of pain, and a feeling of oppression across the front of the chest. She suffered much from cough, and used to bring up a thick whitish phlegm, which had been occasionally streaked with blood until three weeks before her admission, when the blood ceased to appear. She was very pale, and at times had considerable difficulty of breathing, when her face would become livid. She stated that her father had died two years previously of paralysis of the lower extremities, at the age of forty-six. Her mother had died twelve months before him of consumption, aged thirty-four years. Two brothers and one sister were living and healthy. They had all had scarlet fever and measles, but Jane O'K. herself appeared not to have had any previous illness, measles excepted. There was no history of rheumatism or of scarlet fever in her case. She had, however, been very hard worked, and exposed to great privations and drudgery. She looked pale and wasted, was very poorly developed, of a careworn aspect, and prematurely aged appearance. There was scarcely a trace of mammary development, nor had she ever menstruated. When closely examined about the spitting of blood from which she said she had suffered, she explained that the blood had been spat up on some six occasions in the form of small dark-coloured clots. Her difficulty of breathing was greatly increased on walking. She suffered at times from pain in the eyes and frontal headache. Her thirst was excessive, there was loss of appetite, and she often felt sick after meals, and even vomited. Since the commencement of her illness she had lost much flesh, and she used to sweat profusely at night, and more particularly towards morning. Sometimes she felt pains in her elbows, but these pains do not seem to have been very severe. She always felt cold or chilly, and frequently shivered.

Physical Examination.—Inspection revealed a slight pulsation in the carotids. There was no bulging over the cardiac region. The heart's impulse was diffused. It was best marked in the left third interspace outside the parasternal line, but became perceptible in the right 3rd and 4th interspaces at the edge of the sternum. There was no diastolic impulse in the pulmonary area. Palpation confirmed the foregoing observations, but failed to yield evidence of any precordial thrill. Percussion gave a dull note over the entire of the right infraclavicular region, and a comparatively clear sound over the left apex. Posteriorly both bases were semi-dull, especially the left. Auscultation revealed

crepitating râles all over the right apex, bronchial or cavernous breathing over the left apex, compensatory respiration with râles over the posterior portions of both lungs. At the base of the heart a loud systolic murmur was heard. This was, to some extent, carried into the vessels of the neck, but was most intense in the left side of the chest, especially in the parasternal line at the 3rd interspace, the 4th rib, and down to the 4th interspace. The murmur was also audible at the left side of the spine behind. There was no evidence of hypertrophy of the left ventricle of the heart, and this organ was apparently pushed upwards by a congested left base and a distended stomach. The urine was scanty, high-coloured, but clear, of normal specific gravity, and it contained a small quantity of albumen. Her pulse was very rapid and weak. There was clubbing of the finger-nails. The diagnosis, which was made after a few days' careful observation, was coincident obstructive disease of the pulmonary artery and regurgitant mitral valve disease. Mitral regurgitation was suspected from the low level at which the loud systolic murmur was heard at the left side, and from its distinctness posteriorly. At first, indeed, the aortic valves seemed to be diseased also, but subsequently I came to the conclusion that the murmur carried into the vessels was of hæmic origin.

The physical signs in the lungs were at this time erroneously believed to depend on extensive passive hyperæmia connected with mitral regurgitation, and not on the condition which really existed—pulmonary consumption (pneumonic and tuberculous phthisis).

Some doses of iodide of potassium and bark were given for a few days, and the bases of the lungs were repeatedly dry cupped. On April 8th, the potassic iodide was omitted, and syrup of bark and tincture of digitalis were prescribed. The patient improved considerably, and early in May left for the Convalescent Home, Stillorgan.

A fortnight afterwards she was readmitted (May 21st), suffering from general dropsy of an extreme degree. The physical signs connected with the heart and lungs were not much altered, but there seemed to be a rapidly advancing pulmonary œdema, and the urine was loaded with albumen. She lingered for some weeks. The anasarca became so great that her legs were punctured—at first apparently with safety; but after a few days a child in the desquamation stage of scarlet fever was unfortunately admitted to the Smyly Ward through inadvertence, and—whether it was *post hoc* or *propter hoc* I do not venture to say—erysipelas attacked the left foot and leg, which speedily became gangrenous, so that death supervened on the 13th of July.

Autopsy.—There was extensive destructive disease of the apices of both lungs, but the left apex was riddled with cavities. The base of the right lung was chiefly solidified, and here, as well as in the left lung, there were cicatrices, foci of caseous degeneration, tubercles, and

occasionally a patch of induration, resembling an old hæmorrhagic infarction.

The heart was, for the most part, healthy, but the pulmonary valves were puckered and thickened, projecting into the lumen of the pulmonary artery to the extent of two lines or so.

The kidneys were the seat of a fatty degeneration, but were not much enlarged. The liver and spleen were both enlarged—the former viscus presenting the characters of “nutmeg liver.”

There are several points of interest in the foregoing case. In the first place, the malformation of the pulmonary valves was perhaps not congenital, but acquired, for many of the elements mentioned by Kussmaul as incidental to congenital stenosis were wanting—namely, (1) early cyanosis, and other tokens of heart disease, collectively called physical symptoms of narrowing of the pulmonary artery, (2) patency of the foramen ovale or of the ductus arteriosus Botalli, (3) contraction of the trunk of the pulmonary artery and thinning of its walls, and (4) contraction or stunting of the right ventricle. It is true that evidences of any general endocarditis or endo-arteriitis are also wanting in the present case; but we can well imagine that a continued strain put on the pulmonary valves by hard work and lifting heavy weights might produce a localised endocarditis almost limited to the valves. This may very well have happened in the present instance.

The next point of interest is the occurrence of destructive lung disease in the presence of pulmonary obstruction. This coincidence of the two diseases is now fully recognised and well known. According to Rosenstein,^a tuberculosis and caseous processes in the lungs figure prominently among the causes of death in the cases of pulmonary stenosis which lived to the age of twenty. Stölker calculates that this occurs in 14 per cent. of the cases; Lebert's estimate is still higher. In the opinion of the last named author, this complication depends on no accidental coincidence, as might be the case with few foci, or with the remains of old ones, but on a progressive active and destructive process, which becomes more and more prominent with the progress of the disease. He adds:—“Up to the tenth year it is comparatively rarely fatal; it reaches its height in the second decade, and is then frequently the cause of death.” “A relatively rapid chronic course is the exception, and though in two cases death occurred three and four months respectively after the appearance of lung symptoms, it is probable that the disease was previously latent for a time.” In Jane O'K.'s case the lung affection had certainly run a course of five months before her death. The fact that her left lung was in a more advanced stage of disease than the right, also bears out Lebert's remark that this is the rule in such cases. According to him, the anatomical appearances are quite characteristic

^a Von Ziemssen's *Cyclopædia of Pract. Medicine*. Vol. VI. P. 161.

of chronic disseminated pneumonia, with increasing infiltration, destruction of tissue, and formation of cavities, or they are such as are found in the form characterised by the growth of granular cells (tubercle-granulations). As to the ætiology of the lung disease in pulmonary stenosis, Lebert observes that it is an interesting fact in the study of inflammation, as well as of tuberculosis, that a direct disturbance of the supply of blood is much more irritating and conducive to inflammation than a great, but constant and regular, increase of it. Hence one reason why tubercular and inflammatory lung disease is so rare in disease of the *left* side of the heart, while it is common in pulmonary stenosis. In the latter case, however, Lebert attaches more importance to the unequal distribution of the blood than to the general poorness of the supply.

The remaining features in the case which seem to call for remark are the murmur heard in the aortic area and carried into the vessels, the visible cardiac impulse to the right of the sternum in the dextral decubitus, the *rationale* of the general dropsy, and, lastly, the fatal erysipelas.

As to the aortic murmur, I have little doubt it was of hæmic origin. The nature of the girl's illness, the manifest anæmia in the case, and the healthy condition of the aortic valves seem to prove this.

The appearance of a cardiac impulse to the right of the sternum when the patient lay on her right side, may be explained by an increased action of the hypertrophied right ventricle, and by the retraction of the diseased right lung.

An explanation of the general dropsy may be sought in a hydræmic condition of the blood, aided by a rapidly developing obstruction to the circulation through the lungs. The result of this latter factor would be an over-filling of the general venous system, or increased venous tension, and then a lack of albumen in the blood would favour an abnormal transudation from the congested capillaries.

The setting in of a low erysipelatous inflammation under such circumstances is, no doubt, of common occurrence, but I would suggest whether the exposure of Jane O'K. to the virus of scarlatina—a disease which presents some analogies to the erysipelatous affections—was not more than a coincidence.

DR. FINNY asked was there any inflammation of the tricuspid surface or of the pericardium.

DR. HENRY KENNEDY said he was inclined to set the erysipelas down to the operation rather than to any infection.

DR. J. W. MOORE, in reply, said that the tricuspid orifice was not examined. In the majority of those cases the probability was that the lesion was congenital, but the features of the present case pointed rather to an acquired morbid condition of the valves. There was no recent pericarditis.

An Extraordinary Case of Hiccup. By ARTHUR WYNNE FOOT, M.D.,
Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital.

ON the 9th of April, 1881, I was sent for to the Angel Hotel, to see a boy, aged fifteen, who had been recommended to my care from the Co. Mayo. He had been hiccupping incessantly, except when asleep, for twenty-two weeks—since 5th November, 1880. The hiccup came on suddenly, in the morning, just after he had got up; immediately before, it appeared, he had taken a dose of Powell's Balsam of Aniseed. He was a student at St. Stanislaus' College, Tullabeg, and was a lad of unusual intelligence and smartness. Before the hiccup appeared he had been dyspeptic, and was using Pepsine wine and Eno's Fruit Salt. The hiccup "came on in a second," and has since continued, though he has consulted eight medical men in the West of Ireland. The hiccup was loud and noisy. The day I first saw him its rate was 15 per minute = 900 per hour, and caused so much attention in the coffee-room of the hotel that it was plain it would be most inconvenient for him to remain there. He also vomited all his meals—nothing remains on his stomach, "the hiccup pumps them up." He had had two similar, but less severe attacks—one in the summer of 1879 and one in the summer of 1880. The latter lasted for a week, the former for a shorter time. Though nothing remains on his stomach he did not feel hungry. For a fortnight before coming to Dublin he had been fed with nutritive enemata, but they were given up because he could not retain them. The cure of his attack in the summer of 1880 was attributed to a visit to Knock, but on the present occasion he had derived no benefit from a visit there. The only cause he can think of for the hiccup is his habit at school of leaning forwards and pressing his chest against a desk. I ordered a blister to the nape and the following—

R. Syr. chloral (B. P.), 3 vj.
Potassii bromidi, 3 iij.
Liquor. atropiæ, m. vj.
Aquæ camphoræ, ad 3 vj.
s. 3j. horâ somni.

He was moved, by my advice, to the Meath Hospital, where, on the 12th (April), the hiccup was 18 per minute, 1,080 in hour. Great tenderness across front of abdomen, corresponding to attachment of diaphragm, so much so that he disliked greatly the pressure of a linseed-meal poultice, for which a sheet of French wadding, sprinkled with chloroform, was substituted. He was ordered ice; succus conii in 3j doses every three hours, and enemata of beef-tea.

15th April.—He cannot retain the enemata, though carefully administered by a skilled nurse; can take milk only in teaspoonfuls, but manages in this way to get down a quart of it in the daytime. Hiccup

to-day 16 per min. (960 per hour); it gets more frequent when anyone disturbs him; to have x m. chloroform on sugar three times a day. The hiccup is a dragging kind of sound, not the short sharp "hig" usually heard; it is often very like wind breaking its way up the œsophagus.

16th.—Hiccup, 20 per min. (1,200 per hour); when left alone it is not nearly so loud or so frequent as when he is noticed or his bed approached. Yesterday he was able to take some milk, arrowroot, and the yolk of an egg, beaten up with warm water and sugar. Has a difficulty in swallowing—"things stop on their way down, and come up again." He likes acids, and takes the juice of an orange every day. To-day, thinking there might be undue acidity in the stomach, he was given 30 m. liq. potassæ every third hour, without any relief.

18th.—No improvement. Hiccup, 20 per min. (1,200 per hour).

On 19th the hiccup was at its worst—22 per min. (1,320 per hour). Thinking it might be due to lumbrici, I gave him ten grains of calomel, which produced three motions, but no worm. He vomited in the evening, "curds and water like;" he observed that the act of vomiting and the preparations for it deranged the rhythm of the hiccup. "The hiccup was caught in his stomach entirely." The sound he made to-day was very like the eructations of one who is sea-sick.

20th.—Ordered—

Iodoformi, 6 gr.

Ext. can. ind., 2 gr.

Ext. conii 3ss., di. in pil. vj. s. 1, t. d.

He began to improve immediately after he got these pills.

On 22nd felt much better in every way, the hiccup had fallen to 10 in the minute (600 in hour); took a quart of milk and a custard since yesterday; was out about the grounds all yesterday.

23rd.—The can. ind. in the pills increased to $\frac{1}{2}$ grain three times a day, and on 25th, in addition, he began to take 5 m. of the tincture as often. The hiccup gradually got less frequent, softer, and less noisy, till, on 28th, he said "he doesn't find it at all hardly now." On 30th it occurred 8 times in the minute (480 in hour). May 4th, hiccup nearly gone; dose of can. ind. increased to 2 grs. a day; the sickness has nearly ceased. On 11th he was able to sing, which the hiccup had hitherto quite prevented him from doing. It now occurs only about once in a half hour.

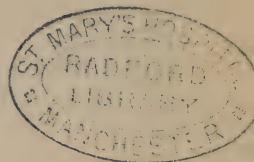
He went out of hospital well, and able to eat, 14th May, 1881, after a stay there of four weeks and six days. On the 19th May, he wrote to me from the Co. Mayo that he was fast recovering his strength and appetite, and was taking no medicine, and required none. On the 23rd July he wrote from Lisdoonvarna that ever since I had seen him he continued to improve daily.

I should have mentioned that before he was put on the Indian hemp

I had frozen the skin over the epigastrium and along the course of the phrenic nerves in the neck and over the upper cervical vertebræ with the ether spray, with the effect of producing slight temporary relief.

Table of the Hiccup.

			Per Min.		Per Hour.
April 9	...	15	...		900
" 11	...	12	...		720
" 12	...	18	...		1,080
" 15	...	16	...		960
" 16	...	20	...		1,200
" 18	...	20	...		1,200
" 19	...	22	...		1,320
" 21	...	12	...		720
" 22	...	10	...		600
" 23	...	11	...		660
" 25	...	10	...		600
" 28	...	12	...		720
" 30	...	8	...		480



The rate of the hiccup was calculated on 13 occasions. It varied from 8 to 22 per minute, or from 480 to 1,320 per hour. Its average rate was 14 per min., or 840 per hour. It lasted without intermission, except during sleep, for 26 weeks.

No doubt this case did not come up to those given by Romberg. I have seen persons die of hiccup. Indian hemp has cured obstinate cases of it before. Hiccup was peculiarly dangerous with pregnant women, as leading to abortion.

DR. HARVEY.—What was the boy's condition during sleep?

DR. FOOT.—He was perfectly quiet. He never hiccupped during sleep.

DR. CHARLES F. MOORE mentioned the case of a gentleman who had been a long time in India, and who suffered from very obstinate hiccup and eructations. He had had sunstroke a couple of years previously, from which his nervous system had suffered. He eventually got well of the hiccup.

DR. HENRY KENNEDY said hiccup sometimes occurred in acute diseases. He had seen almost an epidemic of it occurring in typhus fever, several cases of it occurring within a month. Chalk had been found effectual in Cork-street Fever Hospital—20 grains three times a day. The late Dr. Harkin was the originator of that treatment. About four years ago he (Dr. Kennedy) had a case of a gentleman in scarlatina who began to hiccup while the rash was on him, and the hiccup became very formidable. He (Dr. Kennedy) gave large doses of chalk,

but it had not the slightest effect. He then successfully tried chloral in small but frequently repeated doses. Recently, in Simpson's Hospital, a nurse called his attention to a poor old man who had a curious sort of spasm. On removing his bedclothes he observed an action of the diaphragm which did not produce any outward sign. About two years ago a young lady, aged twenty-one or twenty-two years, who was seen by Dr. Head and others, was moved to Rathdrum, where Dr. Vance saw her. She had a hiccup which lasted for seven months. It ceased the moment she fell asleep, but recommenced the moment she awakened. On the way to and from Rathdrum the hiccup ceased altogether, but recommenced at the end of the journey. Near the termination of the case the hiccup became double, and it was always worse if she was in any degree excited. After a great variety of treatment had been used, an amateur doctor cured her by electricity, which was applied daily for three weeks. The lady had ever since been free from hiccup. She had no throwing off, but was hysterical.

DR. WALTER G. SMITH submitted that Dr. Foot's case was one of male hysteria. It was analogous to the cases of ringing brassy cough which occurred in hysterical girls, and which, after lasting for months in defiance of treatment, got well either after some trifling change of treatment or after the measures of the physician had been suspended. The age, training, mental temperament, and habits of life of the boy in question were important circumstances; and as the result of coming under the observation of many physicians he had probably come to regard his own case as a curious and interesting one. The hiccup was not the ordinary singultus alluded to by Dr. Kennedy, and which was so often a fatal herald in acute cases. The frequent vomiting was also in harmony with the hysterical theory; and a not unimportant fact was the sudden cure that happened after his first visit to Knock. That would lead one to lay less stress on the effect of therapeutics in such cases; for it was as likely that he should have recovered from expectant treatment as from any active drug; and he was therefore not surprised that the boy should have developed similar symptoms at another time.

DR. FOOT (in reply) said he knew nothing about hysteria in males, and very little about it in females; and the calling of the disease in question "hysteria" seemed to him to be only a polite way of acknowledging ignorance. The brassy cough that women sometimes had he had traced to tender or displaced ovaries. The non-occurrence in the boy of the hiccup during sleep seemed to indicate that there was some deep reflex cause at the bottom of the affection. The German authorities spoke of a "chorea reflexiva" which they traced to uterine or dental troubles. In a large number of cases of chorea the movements did not stop during sleep. The hiccup in the present case was sometimes triple. Cases of hiccup were of the most varied nature. He might mention

one. A country girl got a situation as servant in a house in Merriion-square. A robbery of jewellery occurred in the house, and the master and mistress sent for the police to search the servants' boxes. They searched the box of this young country girl, and jocularly threatened to take her to the police-office. This frightened her so much that she ran out of the house, and walked twenty-eight miles to Wicklow. When she arrived at home she was more dead than alive, and was hiccupping in an extraordinary manner. She hiccupped night and day, and nothing would stay on her stomach or do her any good, so that she died from want of sleep, want of nourishment, and the general shock to her nervous system produced by the fright. True hiccup differed essentially from eructations in this, that it was an inspiratory and not an expiratory effort.

The Society then adjourned.

URETHRAL CRISES WITH HÆMATURIA IN LOCOMOTOR ATAXY.

THE painful visceral crises which occasionally supervene in the course of locomotor ataxy are now commonly recognised. The gastralgic pains, observed first by Topinard, and later carefully studied by Delamarre (Thesis, 1866), especially attract the attention of observers in consequence of their frequency and clinical importance. In 1876, M. Raynaud published, in the *Archives de Médecine*, the case of a patient in whom nephralgic crises were observed. Charcot also and Vulpian, in their classical lectures on ataxy, have described vesical and urethral pains, characterised by frequent painful micturition, with a sensation resembling that of a red-hot iron thrust into the canal, and rectal pains—especially pains having the sensation of a large foreign body forcibly introduced into the rectum. These latter varieties of visceral pains being much less frequently observed than the gastric crises, may, especially when very intense, cause an error in diagnosis, and conceal the principal disease, or cause a suspicion of a complication which does not exist. In this connexion M. Raymond publishes in the *Gaz. Méd. de Paris* (No. 43) another case recently under observation in the Hôtel-Dieu, in which urethralgic crises in an ataxic patient presented exactly the same symptoms as those caused by the presence of a calculus in the bladder, and were also accompanied by hæmaturia. The autopsy demonstrated that the urinary passages were normal, but that the medulla was sclerosed.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, November 5, 1881.

Towns	Population in 1881 (Unre- vised)	Births Registered	DEATHS REGISTERED			DEATHS FROM ZYMOTIC DISEASES							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin, -	348,525	703	627	144	142	-	9	10	3	-	18	12	75	23·4
Belfast, -	207,671	531	342	70	44	3	1	7	2	2	4	10	51	21·4
Cork, -	78,361	156	154	33	41	-	4	4	-	4	10	10	14	25·6
Limerick, -	38,600	65	83	12	20	-	-	9	-	-	3	3	10	28·0
Derry, -	28,947	66	42	7	11	-	-	1	-	-	1	2	2	18·9
Waterford, -	22,401	28	41	6	15	5	-	-	-	-	3	1	3	23·8
Newry, -	14,782	24	27	4	4	-	-	12	-	-	-	1	3	23·8
Galway, -	14,621	29	18	-	8	-	-	-	-	-	1	-	3	16·0

Remarks.

The mortality was high in Limerick and Cork, rather high in Waterford, Newry, and Dublin, moderate in Belfast, and low in Derry and Galway. The registered deaths gave a death-rate of 21·6 per 1,000 of the population annually in twenty large English towns (including London, in which the rate was 21·4), 23·7 in Glasgow, 20·6 in Edinburgh, and 22·7 in the sixteen principal town districts of Ireland. Omitting the deaths of persons admitted into public institutions from localities outside the district, the death-rate in the registration district of Dublin was 22·9 per 1,000 per annum, while it was 25·6 within the municipal boundary. Zymotic affections caused 82 deaths in the Dublin registration district, compared with a ten-years' average of 142·9. Fever, diarrhoea, scarlet fever, and measles were the most fatal of this class of diseases. The 18 deaths referred to fever were classified thus—typhus 7, typhoid 9, and "simple continued fever" 2. Smallpox caused 3 deaths in Belfast, and as many as 5 deaths in Waterford. Scarlet fever was widely diffused through the towns, and in Newry was very fatal—

12 out of 27 deaths registered, or 44·5 per cent. of the total mortality, being attributed to this disease.

Continuously cold weather in October raised the general mortality, but more particularly that from diseases of the respiratory organs. Thus in Dublin these affections were returned as the cause of death in 143 instances, compared with 93 in the preceding four weeks, and 103·9 in the corresponding period of the previous ten years. The deaths from bronchitis were 108 (average=76·1), and 27 from pneumonia (average=16·4).

In London the deaths from diarrhoea decreased from 26 in the first week of the period to 13 in the last week, whereas those from diseases of the organs of respiration rose as remarkably—the weekly deaths being 279, 319, 376, and 375 respectively.

On Saturday, November 5, the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals was as follows—smallpox, 0; measles, 6; scarlet fever, 35; typhus, 49; typhoid, 13; pneumonia, 11.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.
for the Month of October, 1881.*

Mean Height of Barometer,	-	-	-	30·011 inches.
Maximal Height of Barometer (on 6th at 9 p.m.),	-	-	-	30·524 „
Minimal Height of Barometer (on 14th at 6 30 a.m.),	-	-	-	28·663 „
Mean Dry-bulb Temperature,	-	-	-	47·7°.
Mean Wet-bulb Temperature,	-	-	-	45·0°.
Mean Dew-point Temperature,	-	-	-	42·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·267 inch.
Mean Humidity,	-	-	-	81·5 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	59·3°.
Lowest Temperature in Shade (on 16th),	-	-	-	30·9°.
Lowest Temperature on Grass (Radiation) (on 31st),	-	-	-	26·2°.
Mean Amount of Cloud,	-	-	-	57·9 per cent.
Rainfall (on 18 days),	-	-	-	3·470 inches.
Greatest Daily Rainfall (on 22nd),	-	-	-	·994 inch.
General Directions of Wind,	-	-	-	E. and N.W.

Remarks.

Rather a cold and stormy month—the mean temperature being 2° under the average of October in the preceding fifteen years—with a preponderance of easterly winds and a rainfall above the average (3·470 inches, compared with 3·199 inches). Of the total rainfall, however, 2·809 inches were registered on four days. A violent storm of wind occurred on the 14th, and easterly gales prevailed from the 18th to the 23rd.

There was a sharp frost on the 16th. Hail fell on the 29th. Until the 7th conditions were anticyclonic, and S.E. winds with cold, fine weather and heavy night dews were experienced. On the 5th the barometer was as high as 30·80 inches over the Gulf of Bothnia. Changeable squally weather ensued, and culminated in a violent gale on the morning of the 14th, after which the sky cleared and the air became dry and crisp. Early on the 13th the sky became overspread with a thin veil of cirrus cloud, in which a solar halo was partially visible. Simultaneously the barometer fell with great rapidity, and during the following night a cyclone passed in an easterly direction across the British Isles, its centre being near Leith at 8 a.m. of the 14th (barometer, 28·42 inches). In Dublin the barometer rose 1·639 inches in $38\frac{1}{2}$ hours after the centre of the disturbance had passed by. An area of high pressure moved quickly north-eastwards in the wake of the depression, so that on the 18th an anticyclone was again found over the Baltic, while another depression was approaching the S.W. and S. of Ireland from the Atlantic. This latter system remained nearly stationary off our S.W. coasts for several days, causing severe S.E. to E. gales, with cold, dry weather at first, but ultimately heavy falls of rain. During the last week conditions of weather were much quieter, but frequent showers and searching easterly winds prevailed—a gradual and uniform decrease of temperature taking place in Dublin from a mean of $52\cdot1^{\circ}$ on the 23rd to $38\cdot9^{\circ}$ on the 30th.

The appearance of an almost stationary cyclonic system off the S.W. of Ireland, and the occurrence of S.E. gales and heavy rains in connexion therewith, is a periodical phenomenon in the latter half of October.

CAFFEINE AND CAFFEONE.

It is the custom to consider caffeine as the principal which comprises in itself all the properties of coffee. Many experimenters—amongst whom must be reckoned Dr. Miquel A. Fargas (*Rev. de Ciencias Med.*)—have found that caffeine was far from representing the entire action of coffee, and that instead of being a stimulant to innervation it was rather a stupefier and tetanising agent. Frogs put under the influence of caffeine were seized with involuntary and convulsive movements, followed by tetanic rigidity. Caffeone gives roasted coffee its valuable aroma. It exists in a latent state only in the raw coffee, and is developed by the process of roasting. Its action on the heart is opposed to that of caffeine. It augments the force and the frequency of the beats of this organ, and raises the ascensional line in sphygmographic tracings. In man it acts as a volatile and diffusible exciting tonic, which in the lower animals becomes an energetic poison.—*Gaz. Méd. de Paris*, No. 41.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

LACERATION OF THE CERVIX UTERI.

IN the *New York Medical Journal and Obstetrical Review* for Sept., 1881, Dr. Charles Carroll Lee, Surgeon to the New York State Woman's Hospital, indicates the proper limitations of Emmet's operation for laceration of the cervix uteri. Little heed, he remarks, was paid at first to Dr. Emmet's suggestion of the pathological importance of lacerations of the cervix and of the desirability of treating them by operation in certain classes of cases; but, after Dr. Emmet had, on a subsequent occasion, more fully demonstrated his views, it soon came to pass that the operation of trachelorrhaphy was performed in the most trifling cases, and advised in conditions entirely unsuitable for it. Hence an unjust obloquy was thrown upon it, and in many European countries, England in particular, it is still regarded with disfavour. One of the immediate results that occasionally follow cervical laceration is *post partum* hæmorrhage, and the author thinks it may fairly be questioned if the puzzling cases in which hæmorrhage goes on, in spite of firm uterine contraction, are not always of this nature. He gives full credit to Dr. Pallen for his observation and teaching in regard to this aspect of the matter, and then passes to a consideration of the conditions that demand the performance of the remote operation, together with those that contra-indicate it. In many cases of notable rents of the cervix there is no indication for operative interference. The obvious or ascertained pathological influence of the laceration—not its extent or size—should be our guide for its treatment. If it presents a cicatrised surface, and if there is no hyperplasia or inflammatory condition of either the neck or the body of the uterus, a surgical operation would be absurd, even though the rent were bilateral, and had divided the cervix up to the vaginal insertion. If, on the contrary, the laceration is unilateral only, and comparatively small in area, but with a raw, unhealed surface, and associated with either cervical or corporeal metritis, it is absolutely certain that the inflammation will never get well until the laceration is cured, although the symptoms may be overcome for the time being. Still more pointedly may this be said of extreme cases of bilateral laceration with extensive eversion of the cervical canal, with or without cystic degeneration. A much more limited class of cases is that in which the laceration has healed, leaving the cervix tough and nodular, and the angles of the rent filled with cicatricial tissue, in which nerve & laments

are often caught and compressed, causing excessive reflex irritation of the uterus and of the general nervous system. The test of such a case is the sudden pain, like a toothache, which pressure with the finger in the angle of the tear generally gives. In such cases the operation is speedier and more thorough than other measures in destroying the "cicatricial plug," never having failed, in the author's experience, to yield a most satisfactory result. While thus warmly urging trachelorrhaphy in proper cases, Dr. Lee defines no less positively the conditions that forbid its performance. Parametritis is undoubtedly a bar to the operation; and yet, he adds, how often are we asked to operate or to sanction an operation while the pelvis is still half filled with an inflammatory deposit of lymph! Of the importance of pelvic peritonitis less need be said, partly because opinions differ as to whether this condition can be separated from parametritis, and partly because the objection raised in the former inflammation would lie equally in this case. As inflammatory fixation of the uterus is, however, peculiarly characteristic of pelvic peritonitis, its existence in any form should be deemed an insuperable barrier to the operation. Endometritis and acute trachelitis also contra-indicate it, as well as all conditions of extreme impairment of the general health, except such as may reasonably be presumed to depend upon the laceration itself or upon the uterine disturbance that is kept up by it.

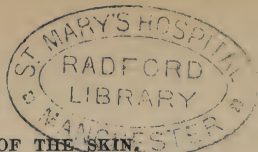
IODOFORM IN LUPUS.

IN claiming a value for iodoform in lupus, Riehl (*Wien. med. Woch.*) justly remarks that the main principle of treatment should be to spare the healthy tissue. Hence mild cauterisation, puncture, scarification, and scraping are to be preferred in most cases to extirpation by the knife or by a powerful caustic. The numerous mild caustics employed in the treatment of lupus possess one quality in common—viz., a tendency to produce superficial sloughing and suppuration, after which a scar is formed by granulation. Iodoform, on the contrary, checks the suppurative process, and the lupus patch heals by gradual absorption of the diseased tissue. After a trial of this remedy in twenty cases, the writer recommends it as extremely efficacious, and gives the following method of application:—The diseased skin, first freed from greasiness by means of a vigorous soap friction, is painted with a solution of caustic potash (one part in two of distilled water). After the lapse of from one half to two minutes the epidermis will appear swollen and transparent, and the further action of the caustic should be checked by the application of water. Upon the raw patch now produced finely-powdered iodoform should be strewn to a thickness of one to two millimetres, and the part covered with cotton and strips of plaster. This dressing may be removed in from three to eight days. In all the cases treated by the

writer in this manner no pus was found upon the removal of the dressing. The iodoform was seen in the pits caused by the absorption of the lupus nodules, and the swelling and redness had mostly disappeared. In severe cases this proceeding was repeated two or three times before the lupus infiltration was entirely gone. The application of the iodoform to the raw skin occasioned no pain or any unpleasant sensation, and the suggestion is offered by the writer that, in cases where the lupus has not already ulcerated, the pain of the cauterisation of the skin may be alleviated by means of local anæsthesia.—*N. Y. Med. Jour.*, Aug., 1881.

IS THERE A SPECIFIC URETHRITIS?

IN a "special article" in the September number of the *New York Medical Journal and Obstetrical Review*, Dr. P. Albert Morrow handles the question of the specific or non-specific nature of gonorrhœa. After a fair statement and a close analysis of the arguments for and against specificity, he concludes that the position of the *virulists* rests altogether upon pure hypothesis, and is wholly untenable, while all the facts—experimental, clinical, and pathological—are overwhelmingly in favour of the non-specific character of gonorrhœal inflammation. When we apply the gauge of specificity to gonorrhœa it corresponds to none of the conditions of an undoubtedly specific inflammation. No artificial production of any disease belonging to this group is possible; a specific disease is the product alone of a specific poison. Gonorrhœa, on the contrary, may be due to a variety of causes—contagious, irritant (mechanical or chemical), diathetic, &c. Again, in all specific diseases, there is between the time of infection and the first expression of the disease a period of incubation. No incubation, properly so called, characterises gonorrhœa. A drop of this same gonorrhœal pus, which may require two or three days to excite suppuration of the urethra, will develop such effect in a few hours when applied to the conjunctiva, showing that the so-called incubation depends not upon the quality of the exciting cause, but upon the susceptibility of the mucous membrane. Another distinctive peculiarity of this group is that a single attack of the disease confers almost complete security from another attack—a peculiarity precisely the opposite of what is observed of gonorrhœa. The morbid poison of a specific inflammation, once in action, continues until the textural predisposition to its special stimulus is exhausted. The patient is incapable of regenerating the poison or of being affected by it when exposed anew. Both of these conditions are negatived in the clinical history of gonorrhœa. Finally, specific inflammation determines special pathological changes and demands special treatment. Identical pathological processes are met with in urethritis from various causes, and the most radical of *virulists* treat all urethral inflammations alike.

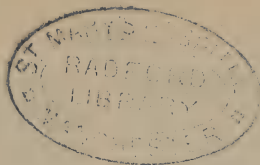


NAPHTHOL IN DISEASES OF THE SKIN.

KAPOSI calls attention (*Wien. med. Woch.*) to the value of this substance in skin diseases, and from the success which he reports as having followed its use in upwards of a hundred cases, it seems quite probable that a new and valuable substitute for tar has been discovered. Its efficacy, which cannot be denied, depends, according to Kaposi, upon its action in penetrating the skin, contracting the paretic and distended vessels, and promoting resolution of the sub-inflammatory condition of the papillary layer, thereby lessening speedily the accompanying pruritus. Believing that some one of the numerous constituents of tar would probably exert a similar beneficial action upon the diseased skin, and at the same time be free from the unpleasant features of the time-honoured remedy, he selected naphthol for experimentation (the B-naphthol of the chemists— $C_{10}H_8O$). This is soluble in dilute alcohol, or in oil, and hence is capable of being applied in either solution or ointment. Kaposi employed a solution, varying in strength from $\frac{1}{2}$ to 10 per cent., and an ointment of from 1 to 15 per cent. strength, which he terms “unguentum naphtholi simplex.” In the treatment of scabies he employed an “unguentum naphtholi compositum,” prepared according to the following formula: *R.* Naphthol, 15 parts; lard, 100 parts; green soap, 50 parts; prepared chalk, 10 parts. This ointment not only killed the acari and destroyed the cuniculi, but had a beneficial effect upon the inflamed and eczematous portions of skin. As this salve, moreover, had no marked odour, and did not stain the skin or the clothing, it was considered to be an improvement upon the remedy commonly used—viz., Hebra’s modification of Wilkinson’s salve (sulphur, tar, soap, and lard). In psoriasis a 15 per cent. ointment of naphthol produced a speedy disappearance of the lesions. As no staining of the skin or hair attended its use, its advantage over chrysophanic acid, and its adaptability to lesions of the face and scalp, were quite apparent. In the treatment of eczema in its squamous stage, or in a persistent papular form, a naphthol lotion of $\frac{1}{4}$ to 2 per cent. strength was found to produce the beneficial effects of tarry applications. In one case of erythematous lupus a cure was effected, but in lupus vulgaris the naphthol proved of no value.—*N. Y. Med. Jour. and Obstet. Rev.*, Aug., 1881.

CARBOLIC ACID IN WHOOPING-COUGH.

DR. A. D. MACDONALD finds carbolic acid in doses of one-fourth minim to a child of six months, one-half minim for one of a year, and one minim for one of two years and upward, to be the best remedy in this disease. He believes that this favourable effect of carbolic acid arises from its having a similar action to that of creasote on the motor fibres of the vagus to the stomach, and from a lowering of the vitality of the specific germ of whooping-cough disease.—*Edin. Med. Jour.*, June.



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